

**Climate, Atmospheric and Marine Science Terminology**  
**May 2018**

| <b>TERM</b>                    | <b>DEFINITION</b>  | <b>Sesotho Equivalent</b>               |
|--------------------------------|--|---|
| <b>Absorption</b>              | absorption of particles of gas or liquid in liquid or solid material   | <b>Ho monya</b>                         |
| <b>absorption bands</b>        | is a range of wavelengths, frequencies or energies in the electromagnetic spectrum which are able to excite a particular transition in a substance         | <b>Lebanta la ho monya</b>              |
| <b>Absorptivity</b>            | The fraction of radiation absorbed at a given wavelength.  | <b>Monyeho</b>                          |
| <b>abundance</b>               | when a substance in a reaction is present in high quantities   | <b>Bongata</b>                          |
| <b>Absolute instability</b>    | The state of a column of air in the atmosphere when it has a super adiabatic lapse rate of temperature, that is, greater than the dry-adiabatic lapse rate | <b>Popeho ya maru</b>                   |
| <b>Absolute stability</b>      | The state of a column of air in the atmosphere when its lapse rate of temperature is less than the saturation-adiabatic lapse rate.                        | <b>Tlhokeho ya popeho ya maru</b>       |
| <b>Absolute vorticity</b>      | Vorticity is the sum of the earth's vorticity and relative vorticity   | <b>Tekanyo ya ho bidika ha meya</b>     |
| <b>Acceleration</b>            | Acceleration is the rate at which something speeds up.   | <b>Ho akofisa</b>                       |
| <b>Accretion</b>               | The process by which water vapor in clouds forms water droplets around nucleation sites  | <b>Popeho ya marothodi</b>              |
| <b>Acid Rain</b>               | is a rain or any other form of precipitation that is unusually acidic, meaning that it possesses elevated levels of hydrogen ions (low pH)                 | <b>Pula e silafetseng</b>               |
| <b>Adiabatic heat transfer</b> | Heat is transferred from the hot fluid to the cold fluid   | <b>Phodiso</b>                          |
| <b>Adiabatic lapse rate</b>    | Change in temperature of a parcel of air as it moves upwards (or downwards) without exchanging heat with its surroundings                                  | <b>Tekanyo ya phodiso e tsitsitseng</b> |
| <b>Adiabatic process</b>       | Net heat transfer to or from the working fluid is zero   | <b>Ho fodisa/phodiso</b>                |
| <b>adsorbtion</b>              | is the adhesion of atoms, ions, biomolecules or molecules of gas, liquid, or dissolved solids to a surface   | <b>ho lala</b>                          |

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| Advection               | Horizontal movement of air   | (Ho foka ha moya o rapaletseng)            |
| Advection fog           | Occurs when moist air passes over a cool surface   | Mohodi o rapaletseng                       |
| Advective heat transfer | Is the transfer of heat through horizontal motion  | Phetiso ya motjheso ka ho rapalla/thapallo |
| aerial photography      | is the taking of photographs of the ground from an elevated position   | Ho nka ditshwantsho moyeng                 |
| aerial survey           | is a geomatics method of collecting information by using aerial photography  | Pokello ya lesedi moyeng                   |
| Aerosol                 | Is a colloid suspension of fine solid particles or liquid droplets in a gas.   | Erosolo                                    |
| Ageostrophic flow       | It is a flow against geostrophic wind or geostrophic currents in the ocean   | Moya o sollang                             |
| Aggregation process     | To gather into a mass, sum, or whole/ process of ice crystal inside a cloud stick together   | momahano                                   |
| agro climatology        | the division of climatology concerned with climate as a factor of agricultural production  | Thuto ya tlaemete ya temothuo              |
| Agulhas Current         | Is the western boundary current of the southwest Indian Ocean  | Leqhubu la Agulhas                         |
| air                     | the invisible gaseous substance surrounding the earth, a mixture mainly of oxygen and nitrogen.  | moya                                       |
| air bubble              | Film of air, usually spherical or hermispherical in shape  | sebudula                                   |
| air density             | is the mass per unit volume of Earth's atmosphere, and is a useful value in aeronautics and other sciences   | boima ba moya                              |
| air discharges          |  | ho ntshwa ha moya                          |
| air flow                | occurs only when there is a difference between pressures.  | Ho foka ha moya                            |
| Air mass                | <u>An air mass is a volume of air defined by its temperature and water vapor content</u>   | Leqhubu la moya                            |
| air pollution           | is the introduction of chemicals, particulate matter, or biological materials that cause harm or discomfort to humans or other living organisms, or cause damage to the natural environment or built environment, into the atmosphere. | Tshilafatso ya moya                        |
| Air temperature         | Is the degree to measure hot and cold of a substance or matter   | Themphereitjha ya moya                     |

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| <b>Airstreams</b>             | A well-defined consistent type of winds   | <b>Motjhoporo wa moya</b>                   |
| <b>Albedo</b>                 | It is a measure of the reflectivity of the earth's surface.   | <b>Albido</b>                               |
| <b>Altimeter</b>              | Is an instrument used to measure the altitude of an object above a fixed level  | <b>Althimitha</b>                           |
| <b>Altitude</b>               | It is the height above sea level  | <b>Bophahamo</b>                            |
| <b>Alto cumulus</b>           | It is a middle-level type of a cloud that is composed primarily of water droplets and has a parallel band shape   | <b>Melatsitsi</b>                           |
| <b>Altostratus</b>            | A blue or blue-gray middle level clouds composed of both ice crystals and water droplets and appear as layers of sheets.  | <b>Maru a medupe</b>                        |
| <b>Anabatic flow</b>          | It is a flow/wind that usually flow upslope   | <b>Ho foka ha moya o tshakaletseng</b>      |
| <b>Anemometer</b>             | Is a device for measuring wind speed, and is a common weather station instrument  | <b>Anemomitha</b>                           |
| <b>annual climate anomaly</b> | yearly deviations of climate  | <b>Ho kgeloha ha tlaemete ya selemo</b>     |
| <b>annual cycle</b>           | the measured quantity of the earth's changing position in orbit over the course of the year   | <b>selemong</b>                             |
| <b>Anomaly</b>                | Is the deviation from the normal or common order, form or rule  | <b>Ho kgeloha</b>                           |
| <b>Antarctic Polar Front</b>  | Is a curve continuously encircling Antarctica where cold, northward-flowing Antarctic waters meet the relatively warmer waters of the subantarctic  | <b>Moedimohatsela wa Anthathika</b>         |
| <b>Anticyclone</b>            | A weather system with high atmospheric pressure at its center, around which air slowly circulates in a clockwise (northern hemisphere) or counterclockwise (southern hemisphere) direction. | <b>Thibelo ya lehodiotswana</b>             |
| <b>anticyclone curvature</b>  | air accelerating (turning) to the right. Wind faster than geostrophic and ageostrophic wind pointing in forward direction.  | <b>Mothinya wa thibelo ya lehodiotswana</b> |
| <b>anticyclonic motion</b>    | systematic atmospheric circulation associated with an anticyclone, which is clockwise in the Northern Hemisphere and anti-clockwise in the Southern Hemisphere                              | <b>Thibelo ya lehodiotswana</b>             |
| <b>anticyclonic shear</b>     | horizontal wind shear of such a nature  | <b>Phetoho ya thibelo ya</b>                |

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|                            | that ist contributes to the anticyclonic vorticity of the flow; that is, it tends to produce anticyclonic rotation of the individual air parcels along the line of flow.                                 | <b>lehodiotswana</b>                         |
| anticyclonic systems       | an anticyclone is a large-scale system of air circulation in the atmosphere in the zones between the equator and   | <b>Metjha wa thibelo ya lehodiotswana</b>    |
| antivalley wind            | A system of diurnal winds along the axis of a valley, blowing downhill and downvalley by night   | <b>Moya o theohelang kgohlong</b>            |
| Anvil                      | Cloud having at its top a projecting point. The form is usually assumed by the tops of fully developed cumulonimbus clouds.  | <b>Lerukepese</b>                            |
| Aphelion                   | The point of the orbit of a satellite or comet which is farthest from the sun. aphelion for the earth occurs on about 1 July; the sun-earth distance is then 1.5% greater than the yearly mean distance. | <b>Afilione</b>                              |
| Ascent of air              | It is the rising of air  | <b>Ho nyoloha ha moya</b>                    |
| Atmospheric boundary layer | <u>Is the lowest part of the atmosphere that is about 1km and its behaviour is directly influenced by its contact with a planetary surface</u>   | <b>Lera la moedi wa sepakapaka</b>           |
| Atmosphere                 | The gaseous envelope which is held to the earth by gravitational attraction and which, in large measure, rotates with it.  | <b>Sepakapaka</b>                            |
| Atmospheric circulation    | Atmospheric motions above the Earth's surface.   | <b>Potoloho ya moya sepakapakeng</b>         |
| Atmospheric forcing        | It is a force exerted by atmospheric pressure  | <b>Matla a kгатello ya moya sepakapakeng</b> |
| Atmospheric pollutant      | Air gases in the atmosphere such as carbon dioxide, methane, and halocarbons, the primary greenhouse gases.  | <b>Disilafatsi tsa sepakapaka</b>            |
| Atmospheric pressure       | The weight of a column of air over and area  | <b>Kгатello ya moya sepakapakeng</b>         |
| Atmospheric Thermodynamics | Study of heat to work transformations (and the reverse) in the earth's atmospheric system  | <b>Thuto ya phetoho ya sepakapaka</b>        |
| Attenuation                | a general term used to denote a decrease in signal strength in transmission from one point to another.   | <b>Athenuweyishene</b>                       |

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| <b>Autumn</b>           | The season of the year that the transition period from summer to winter, occurring as the sun approaches the winter solstice.  | <b>Lehwetla</b>                     |
| <b>Baroclinic</b>       | The variation with depth of motions associated with variations of density with depth.  | <b>Barotliniki</b>                  |
| <b>Barometer</b>        | An instrument used for measuring atmospheric pressure.   | <b>Baromitha</b>                    |
| <b>Barotropic field</b> | A distribution of atmospheric pressure and mass such that the specific volume, or density, of air is a function solely of pressure.  | <b>Sebaka sa Barotrophiki</b>       |
| <b>Benguela Current</b> | Eastern Boundary Current characterised by cold water flowing north-ward along the western coast of South Africa.   | <b>Leqhubu la Benguela</b>          |
| <b>Berg winds</b>       | Is the South African name for a foehn wind, a hot dry wind blowing from the mountainous interior to the coast. It varies from mild (about 10km/h) to gusts up to 100km/h that cause structural damage. It is strongest in the western portion of the continent | <b>Meya ya dithabeng</b>            |
| <b>Biomass</b>          | The mass of biological material present per plant or animal, per community or per unit area.   | <b>Boima ba sephedi</b>             |
| <b>biomass burning</b>  | is the burning of living and dead vegetation.  | <b>Ho tjha ha dimela</b>            |
| <b>Biosphere</b>        | The zone incorporating elements of the hydrosphere, lithosphere and atmosphere, in which life occurs on earth.   | <b>Tikoloho ya diphedi</b>          |
| <b>Blocking Highs</b>   | Any high that remains nearly stationary or moves slowly compared to the west-to-east motion upstream from its location, so that it is effectively blocks the movement of migratory cyclones across its latitudes.  | <b>Kgatello e hodimo ya thibelo</b> |
| <b>Boundary layer</b>   | A layer of more or less stationary fluid (such as water or air) immediately surrounding an immersed object in relative motion with the fluid.  | <b>Lera la moedi</b>                |
| <b>Breeze</b>           | A light wind; on the Beaufort wind scale, a wind blowing at 4-31 mph (6.4-49.8   | <b>Moya o mosesane</b>              |

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|                             | km/h).   |   |
| <b>Buoy</b>                 | A distinctively shaped and marked float, sometimes carrying a signal or signals anchored to mark a channel or navigational hazard.   | <b>Boye</b>   |
| <b>Buoyancy</b>             | The upward force that is exerted on a body when it is immersed in a fluid.   | <b>Phaphalatso</b>  |
| <b>Buys Ballot Law</b>      | In the Southern Hemisphere, if you stand with your back to the wind the area of low pressure is on your right.   | <b>Molao wa Buys Ballot</b>                               |
| <b>C.A.P.E</b>              | Convective Available Potential Energy  | <b>Boteng ba Kgonahalo ya Matla a Tshekallo (B.K.M.T)</b> |
| <b>Carbon dioxide</b>       | A colourless, odourless gas that now constitutes less than 1 % of the Earth's atmosphere.  | <b>Khabone Dayeoksaete</b>                                |
| <b>Carbon monoxide</b>      | A colourless odourless gas that is normally present in air and is produced by living organisms where insufficient oxygen is present.   | <b>Khabone Monoksaete</b>                                 |
| <b>cartography</b>          | The technique and science of representing spatial relationships by means of maps.  |   |
| <b>Centrifugal force</b>    | It is the apparent force acting outward from the axis of rotation in a rotating system.  | <b>Matla a tswang mokgubung</b>                           |
| <b>Centripetal force</b>    | It is the acceleration of a body travelling in a curved path.  | <b>Matla a kenang mokgubung</b>                           |
| <b>Clear air turbulence</b> | <u>Is the turbulent movement of air masses in the absence of any visual cues such as clouds, and is caused when bodies of air moving at widely different speeds meet</u>   | <b><u>Thulano ya maghuba a meya</u></b>                   |
| <b>circulation</b>          | The movement of masses of water on the surface or in the depths of the oceans.   | <b><u>potoloho</u></b>                                    |
| <b>Climate</b>              | The weather conditions prevailing in an area in general or over a long period.   | <b>Tlaemete</b>   |
| <b>Climate change</b>       | A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. | <b>Ho fetoha ha tlaemete</b>                              |
| <b>Climate models</b>       | Are quantitative methods to simulate   | <b>Setshwantsho sa tlaemete</b>                           |

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|   | the interactions of the atmosphere, oceans, land surface, and ice   |   |
| <b>Climatic variations</b>                    | Is a significant and lasting change in the statistical distribution of weather patterns over periods ranging from decades to millions of years.                             | <b>Phapano ya tlaemete</b>                                      |
| <b>Climatology</b>                            | A scientific study of climate   | <b>Dithuto tsa tlaemete</b>                                     |
| <b>Cloud</b>                                  | A visible mass of condensed water vapor floating in the atmosphere, typically high above the ground.  | <b>Leru</b>   |
| <b>Cloud base</b>                             | The lowest level at which cloud water droplets or ice crystals are observed, as distinct from clear air or haze.  | <b>Motheo wa leru</b>   |
| <b>Cloud bands</b>                            | Cloud formations distributed as bands or lines  | <b>Melatsitsi</b>   |
| <b>Cloud cover</b>                            | The fraction of the sky that is covered by either an individual type of cloud or the total amount of all cloud types present.   | <b>Sebaka se kwahetsweng ke maru ()</b>                         |
| <b>Cloud dissipation</b>                      | It is the process by which clouds breaks up.  | <b>Ho apoha ha maru</b>   |
| <b>Cloud droplets</b>                         | The liquid water droplets that constitute clouds.   | <b>Maqhetswana a leru</b>                                       |
| <b>Cloud formation</b>                        | Is the process whereby clouds are formed.   | <b>Theo ya leru</b>   |
| <b>Cloud height</b>                           | The elevation of the base of a cloud above the Earth's surface.   | <b>Bo phahamo ba leru</b>                                       |
| <b>Cloud modification</b>                     | It is any process by which the natural course of development of a cloud is altered by artificial means.   | <b>Ntlafatso ya leru</b>  |
| <b>Cloud seeding</b>                          | A method of trying to induce clouds to give more precipitation.   | <b>Kgodiso ya leru</b>  |
| <b>Cloud temperature/ height coefficients</b> | Coefficients of correlation between temperature and height in a cloud formation   | <b>Themphereitjha ya leru/Palo tsepamo ya bophahamo ba leru</b> |
| <b>Coalescence</b>                            | Is the process by which two or more droplets, bubbles or particles merge during contact to form a single daughter droplet, bubble or particle                               | <b>Momahano</b>   |
| <b>Coastal low</b>                            | <u>Is a shallow low pressure system limited to the lower layers of the atmosphere and is formed when the wind blows from the land TO the sea, usually during bergwinds.</u> | <b>Kgatello e fatshe lebopong</b>                               |

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| Coastal low inversion   | An inversion caused by a coastal low often producing coastal fog  | Sekwahelo sa kgateello e fatshe lebopong |
| Coastal upwelling       | The process by which water rises from a deeper to a shallower depth, usually as a result of divergence of offshore currents.  | Ho phahama ha metsi lebopong             |
| Cold front              | The boundary of an advancing mass of cold air, in particular the trailing edge of the warm sector of a low-pressure system.   | Moedimohatsela                           |
| Condensation nuclei     | Atmospheric particles that attract water droplets, that may then coalesce to form a raindrop.   | Mehlolapula                              |
| Condensation level      | Is formally defined as the height at which the relative humidity (RH) of an air parcel will reach 100% when it is cooled by dry adiabatic lifting                           | Bophahamo ba mehlola pula                |
| Condensation process    | The physical process of transformation from the vapour to the liquid state.   | Ho hlola pula                            |
| Conditional instability | The state of a part of the atmosphere in which the environmental lapse rate lies between the dry adiabatic and saturated adiabatic lapse rates.                             | Tlhokeho popehong ya leru                |
| Contour n.              | A line on a map joining places of equal heights and sometimes equal depths, above and below the sea level.  | molakgokanyo                             |
| Convection              | Atmospheric or oceanic motions that are predominately vertical and that result in vertical transport and mixing of atmospheric or oceanic properties.                       | Ho phahama ha moya                       |
| Convective instability  | Stability of an airmass refers to its ability to resist vertical motion.  | Popeho ya leru e tshekalletseng          |
| Convergence             | When waters of different origins come together at a point or along a line (convergence line), the denser water from one side sinks under the lighter water from other side. | Ho teana/momahano                        |
| Convergence zone        | Is the zone where two air masses meet,  | Mateanong                                |
| Cool air                | Air that is at a lower than usual temperature   | Moya o phodileng                         |
| Coriolis force          | An apparent, rather than real, force which causes the deflection of moving objects, especially of air streams, through the rotation of the earth on its axis.               | Matla a kgelosang                        |

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| <b>Cumulonimbus cloud</b> | A low-based, rain-bearing cumulus cloud, dark grey at the base and white at the crown, which spreads in an anvil shape, as it is levelled by strong upper winds.  | <b>Leru la matlakadibe</b>                   |
| <b>Cumulus cloud</b>      | An immense heaped cloud with rounded white crown and a low, flat, horizontal base, extending as high as 5000 m.   | <b>Leru le ipokellang</b>                    |
| <b>Cutoff low</b>         | A closed upper-level low which has become completely displaced (cut off) from basic westerly current, and moves independently of that current. A closed upper-level low which has become completely displaced (cut off) from basic westerly current, and moves independently of that current.   | <b>kgatello e tlase ya moya e ikemetseng</b> |
| <b>Cyclogenesis</b>       | The formation of cyclones especially mid-latitude depressions.  | <b>Bopeho ya lehodiotswana</b>               |
| <b>Cyclone</b>            | A synoptic-scale area of low atmospheric pressure with winds spiralling about a central low.  | <b>Lehodiotswana</b>                         |
| <b>Cyclostrophic flow</b> | Is a form of gradient flow parallel to the isobars where the centripetal acceleration exactly offsets the horizontal pressure gradient.   | <b>Phallo ya lehodiotswana</b>               |
| <b>Data</b>               | Data is information that has been translated into a form that is more convenient to move or process.  | <b>Datha</b>                                 |
| <b>Data collection</b>    | Is a term used to describe a process of preparing and collecting data, for example, as part of a process improvement or similar project. The purpose of data collection is to obtain information to keep on record, to make decisions about important issues, to pass information on to others. | <b>Pokello ya datha</b>                      |
| <b>Data processing</b>    | The conversion of data into a form that can be processed by computer. The storing or processing of data by a computer.  | <b>Tshebediso ya datha</b>                   |
| <b>Data storage</b>       | Data storage can refer to anything with information recorded on it, from encyclopedias to computer memory, components, devices and media that   | <b>Poloko ya datha</b>                       |

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|                                 | retain digital computer data used for computing for some interval of time.  |  |
| <b>Descent of air</b>           | <b>Air descending above</b>   | <b>Ho theoha ha moya</b>                                 |
| <b>Dew-point line</b>           | Is an imaginary line across a continent that separates moist air from an eastern body of water and dry desert air from the west   | <b>molaphoka</b>   |
| <b>Dew-point temperature</b>    | Is the temperature below which the water vapour in a volume of humid air at a given constant barometric pressure will condense into liquid water at the same rate at which it evaporates. Condensed water is called dew when it forms on a solid surface. | <b>Themphereitjha ya phoka</b>                           |
| <b>Diabatic heating</b>         | A temperature change brought about by the direct transfer of heat energy.   | <b>Ho futhumatsa</b>                                     |
| <b>Diffuse radiation</b>        | The solar radiation received by the Earth's atmosphere or surface that has been modified by atmospheric scattering.   | <b>Phokotso ya mahlasedi a letsatsi</b>                  |
| <b>Diurnal</b>                  | <b>Daily</b>  | <b>Ka letsatsi</b>                                       |
| <b>Diurnal cycle</b>            | <b>Exhibiting a daily cyclical pattern.</b>   | <b>Mokgahlelo wa letsatsi</b>                            |
| <b>Divergence (divergency)</b>  | Horizontal outflow of wind from an area. In a surface divergence, outflow originates from the upper atmosphere.   | <b>Ho arohana</b>  |
| <b>Downdraughts</b>             | The large-scale downward movement of air in the lee of large objects, mountains, etc  | <b>Pula e tsholohang</b>                                 |
| <b>Droplets</b>                 | <u>A small spherical particle of any liquid; in meteorology, particularly a water droplet.</u>  | <b>marothodi</b>   |
| <b>Drought</b>                  | It is a climatic condition where water loss due to evapotranspiration is greater than water inputs through precipitation.   | <b>Komello</b>   |
| <b>Dry adiabatic lapse rate</b> | The rate of decline in the temperature of a rising parcel of air before it has reached saturation. This rate of temperature decline is 9.8° Celsius per 1000 meters because of adiabatic cooling.   | <b>Tekanyo ya phodiso e tsitsing e ommeng</b>            |
| <b>Dry adiabats</b>             | lines of constant potential temperature on a thermodynamic diagram  | <b>Mela ya kgonahalo ya themphereitjha e tsitsitseng</b> |

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| Drybulb potential Temperature | Is the <i>temperature</i> of air measured by a thermometer freely exposed to the air but shielded from radiation and moisture.   | <b>Themphereitjha ya kgonahalo ya moya</b> |
| Drybulb temperature           | Is the temperature of air measured by a thermometer freely exposed to the air but shielded from radiation and moisture   | <b>Themphereitjha ya moya</b>              |
| Dry line                      | A dry line also called dew point line, is an imaginary line across a continent that separates moist air from an eastern body of water and dry desert air from the west   | <b>Molaphoka</b>                           |
| Dry spells                    | A period of abnormally dry weather, generally reserved for a less extensive, and therefore less severe, condition than a drought   | <b>Komello</b>                             |
| Earth radiation               | Energy release by the earth into the atmosphere  | <b>Motjheso wa lefatshe</b>                |
| Earth rotation                | Is the astronomical observations, mainly based on eclipses of the Sun , suggest a deceleration of the Earth 's rotation by about 41 seconds of arc per century.  | <b>Ho potoloha ha lefatshe</b>             |
| Easterlies                    | Are Winds that blow from the east, for example in equatorial regions (trade wind region) and polar regions (polar easterlies).   | <b>Moya wa Botjhabela</b>                  |
| Easterly jet                  | A inuous, relatively narrow ribbon of air that encircles the globe at an altitude of around 11 km, sometimes reaching speeds of 400 kph.   | <b>Jete ya Botjhabela</b>                  |
| easterly low (coastal low)    | An area of weak low pressure that drifts eastward in the belt of prevailing easterly winds just south of the equator   | <b>Kgatello e fatshe lebopong</b>          |
| El Niño                       | A warm southward-flowing current that appears along the coast of Ecuador and Peru around Christmas. It was considered to bring a pleasant respite from the cold Peru Current , and provide welcome rains to the barren coastal region. | <b>El Nino</b>                             |
| emissivity                    | The ratio of the power emitted by a body at a temperature $T$ to the power emitted if the body obeyed Planck's radiation law   | <b>ho ntshwa ha matla</b>                  |

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| <b>energy balance</b>                   | a mathematical relationship, using the principle of the conservation of energy, that shows the energy inputs and outputs of a process or system   | <b>botsitso ba matla</b>                    |
| <b>energy conversion</b>                | The process of changing one form of energy into another, such as nuclear energy into heat or solar energy into electrical energy.   | <b>phetolo ya matla</b>                     |
| <b>energy dissipation</b>               | Any loss of energy, generally by conversion into heat; quantitatively, the rate at which this loss occurs.  | <b>Tahleho ya matla</b>                     |
| <b>energy equation</b>                  | The principle that energy cannot be created or destroyed, although it can be changed from one form to another.  | <b>Palotekano ya matla</b>                  |
| <b>energy exchange</b>                  | Exchange of energy from one source to another.  | <b>phapanyetsano ya matla</b>               |
| <b>energy flow</b>                      | The movement and loss of energy through a community or ecosystem, via the food web.   | <b>phallo ya matla</b>                      |
| <b>energy flux</b>                      | A measure of energy flow, expressed as the amount of energy that moves through a given area in a unit of time.  | <b>tekanyo ya phallo ya matla</b>           |
| <b>energy transfer</b>                  | The transfer of excitation energy from one chromophore or one molecular entity to another by a process not involving radiation; the energy may then be dissipated in a variety of ways, e.g. by fluorescence. | <b>Phetiso ya matla</b>                     |
| <b>entrainment</b>                      | The mixing of surrounding air into a thermal or other flow of air, which inevitably results in the alteration of the latter's properties.   | <b>ho tswakana ha moya</b>                  |
| <b>environment</b>                      | All of the external abiotic and biotic factors, conditions, and influences that affect the life, development, and survival of an organism or a community.   | <b>tikoloho</b>                             |
| <b>Environmental lapse rate</b>         | Is defined as the rate of decrease with height for an atmospheric variable  | <b>Tekanyo ya mohatsela ka bophahamo</b>    |
| <b>Equinox</b>                          | Those times when day and night are of equal length, occur twice a year.   | <b>Ekhwinokse</b>                           |
| <b>Equivalent potential temperature</b> | The equivalent temperature adjusted at a dry adiabatic lapse rate to a pressure level of 1000hPa.   | <b>Kgonahalo ya tekano ya thempereitjha</b> |
| <b>Equivalent temperature</b>           | The temperature that an air parcel would assume if all the water vapour   | <b>Thempereitjha e lekanang</b>             |

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|  | presents were removed by condensation, under conditions of constant pressure, with the latent heat released being used to warm the parcel.           |                                   |
| Evaporation <see also vapourisation>   | The process by which a liquid changes into a vapour with the application of heat. Contrast condensation.   | Ho moyafala                       |
| evapotranspiration                     | return of moisture to the air: the return of moisture to the air through both evaporation from the soil and transpiration by plants                  |                                   |
| Extratropical cyclone                  | A system occurring outside the tropics that has closed isobars around a central low-pressure area, and cyclonic circulation.                         |                                   |
| eye of storm{e.g. of tropical cyclone} | The roughly circular area of comparatively light winds found at the center of a severe tropical cyclone and surrounded by the eyewall.               | lehla la lehodiotswana            |
| Flash flood                            | A sudden flood of great volume, usually caused by a heavy rain.  | Dikgohola tsa tshohanyetso        |
| Fog dissipation                        | Dissipation of a fog   | Ho apoha ha mohodi                |
| Fog.                                   | Aggregation of water droplets or ice crystals immediately above the surface of the earth (i.e., a cloud near the ground).                            | Mohodi                            |
| Forced convection                      | It is a mechanism, or type of transport in which fluid motion is generated by an external source   | Qobello ya ho phahama ha moya     |
| Forecasting                            | Is the process of making statements about events whose actual outcomes (typically) have not yet been observed  | Ho lepa                           |
| Free convection                        | The convection resulting from the flow of air caused by temperature differences in an enclosed space, as opposed to the flow of air caused by a fan. | O phahama ha moya ho lokolohileng |
| Freezing level                         | The lowest altitude in the atmosphere over a given location, at which the air temperature is 0°C; the height of the 0°C constant-temperature surface | Boemo ba kgwamo                   |
| Freezing point                         | The temperature at which a liquid becomes a solid  | Ntlha ya kgwamo                   |
| Frontal system                         | A system of fronts as they appear on a synoptic chart  | Motjha wa moedimohatsela          |

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| <b>Gale</b>                 | A wind with a speed of from 34 to 40 knots (39 to 46 miles per hour; 63 to 74 kilometers per hour), according to the Beaufort scale  | <b>Meya e matla</b>                        |
| <b>Geopotential</b>         | The potential energy per unit mass of a body due to the earth's gravitational field referred to as arbitrary zero.   | <b>Kgonahalo ya matla a kgohedi</b>        |
| <b>Geopotential height</b>  | The height of a given point in the atmosphere in units proportional to the potential energy of unit mass (geopotential) at this height, relative to sea level.   | <b>Kgonahalo ya bophahamo ba lefatshe</b>  |
| <b>Geopotential surface</b> | A surface of constant geopotential, that is, a surface along which a parcel of air could move without undergoing any changes in its potential energy   | <b>Kgonahalo ya bokahodimo ba lefatshe</b> |
| <b>Geostrophic wind</b>     | That horizontal wind velocity for which the Coriolis acceleration exactly balances the horizontal pressure force.  | <b>Moya wa Jeostrofiki</b>                 |
| <b>Global warming</b>       | <u>The gradual increase of the temperature of the earth's lower atmosphere as a result of the increase in greenhouse gases since the Industrial Revolution.</u>  | <b>Ho futhumala ha lefatshe</b>            |
| <b>Gradient wind</b>        | A wind for which Coriolis acceleration and the centripetal acceleration exactly balance the horizontal pressure force.   | <b>Moya o fokang ka botsitso</b>           |
| <b>Greenhouse gases</b>     | A gas in an atmosphere that absorbs and emits radiation within the thermal infrared range.   | <b>Meya ya sepakapaka</b>                  |
| <b>Gust</b>                 | A sudden, brief increase in the speed of the wind; it is of a more transient character than a squall and is followed by a lull or slackening in the wind speed.  | <b>Sefefo</b>                              |
| <b>Gust Front</b>           | is a storm-scale or mesoscale boundary separating thunderstorm-cooled air (outflow) from the surrounding air; similar in effect to a cold front, with passage marked by a wind shift and usually a drop in temperature and a related pressure jump | <b>Sefefo</b>                              |
| <b>Hail</b>                 | Solid precipitation that falls as ice particles from cumulonimbus clouds.  | <b>Sefako</b>                              |

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| Haze                                     | a slight obscuration of the lower atmosphere, typically caused by fine suspended particles   | lerotho                   |
| haze droplets                            | Any small liquid contributing to an atmospheric haze condition.  | Marothodi a rothofatsang  |
| haze layer                               | A layer of haze in the atmosphere, usually bounded at the top by a temperature inversion and frequently extending downward to the ground.  | Moalo wa lerotho          |
| heat                                     | A form of energy that is transferred from one body to another, because of a difference in temperature, from regions of higher temperature to regions of lower temperatures.  | motjheso                  |
| heat balance                             | Equilibrium between the gain and loss of heat at a specific place or for a specific system.  | Botsitso ba motjheso      |
| heat budget                              | Relation between fluxes of heat into and out of a given region or body and the heat stored in the system. In general, this budget includes advective, evaporative, and other terms as well as a radiation term.  | Tekanyetso ya motjheso    |
| heat capacity                            | The amount of heat energy that is required to raise the average temperature of a mass, usually expressed in Joules per Kelvin.   | Bongata ba motjheso       |
| heat conduction                          | The flow of thermal energy through a substance from a higher to a lower temperature region.  | Tsamaiso ba motjheso      |
| heat conductivity (thermal conductivity) | A measure of the ability of a substance to conduct heat, determined by the rate of heat flow normally through an area in the substance divided by the area and by minus the component of the temperature gradient in the direction of flow: measure in watts per metre per Kelvin. | ho tsamaisaha ha motjheso |
| heat exchange                            | A measurer of the heat being conducted through the surface rocks of the Earth.   | Phapanyetsano ya motjheso |
| Heat waves                               | A period of abnormally hot and usually humid weather.  | Maqhubu a motjheso        |
| Humidity                                 | The amount of water vapour in a parcel of air, which can be expressed as absolute humidity or relative humidity.   | Mongobo                   |

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| Hydrostatic equation                  | States that whenever there is no vertical motion, the difference in pressure ( $dp$ ) between two levels ( $dZ$ ) is caused by the weight of the layer of the air                     | Palotekano ya haedrostatiki                   |
| Incoming solar radiation              | Energy from the sun directed to the earth surface   | Mahlasedi a letsatsi                          |
| Instability                           | It is a tendency for air parcels to accelerate when they are displaced from their original position; especially, the tendency to accelerate upward after being lifted                 | Popeho ya maru                                |
| Instrument housing (Stevenson screen) | A case or enclosure to cover and protect an instrument  | Lebokoso la Stevenson                         |
| Intertropical convergence zone (ITCZ) | The region where the northeasterly and southeasterly tradewinds converge, forming an often continuous band of clouds or thunderstorms near the equator.                               | (MDT) Mateano a dithempereitjhara tsa Tropiki |
| Isallobar                             | A line on a weather map connecting places having equal changes in atmospheric pressure within a given period of time.   | Aesalobha                                     |
| Isallobaric Convergence/divergence    | Central regions of low/high values on isallobaric charts are regions of convergence/divergence of air   | Mateano/ho arohana ha aesolobha               |
| Isobar                                | line connecting places of equal pressure  | Aesobha                                       |
| Isobaric surface                      | Surfaces of equal pressure  | Bo ka hodimo ba aesobha                       |
| Isotherm                              | Lines of equal temperature  | Aesotheme                                     |
| Isotherm follower                     | Instrument for measuring the temperature of internal waves  | Sesebediswa sa aesotheme                      |
| Jet stream {e.g. atmosphere}          | Relatively fast uniform winds concentrated within the upper atmosphere in a narrow band.  | Motjhoporo wa moya                            |
| katabatic flow                        | Any wind blowing down the slope of a mountain   | Phallo ya Katabatiki                          |
| Katafronts                            | A front along which the warm air is descending relative to the cold air. Downward motion of the warm air at most levels is generally implied, with frontal activity feeble or absent. | Moedi wa moya wa katabatiki                   |
| Kelvin scale                          | Scale for measuring temperature. In this scale, absolute zero is 0 Kelvins, water boils at 375.15 Kelvins and freezes at 273.15 kelvins.  | Sekala sa Kelvin                              |

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| <b>Kelvin waves</b>               | A type of low-frequency gravity wave trapped to a vertical boundary, or the equator, which propagates anticlockwise around a basin.  | <b>Maqhubu a Kelvin</b>                           |
| <b>Knot</b>                       | A speed of 1 nautical mph. it is equal to 1.15 mph or 1.85 kph. A unit used for reporting and forecasting wind speed.  | <b>Noto</b>                                       |
| <b>La Niña</b>                    | The period of wet conditions during the summer and rainy season in the southern hemisphere   | <b>La Nina</b>                                    |
| <b>Land breeze</b>                | A coastal breeze blowing from land to sea, caused by the temperature difference when the sea surface is warmer than the adjacent land.   | <b>Moya o mosesane o tswang lefatsheng</b>        |
| <b>Land sky</b>                   | The relatively dark appearance of the underside of a cloud layer when it is over land that is not snow covered.  | <b>Moriti wa leru</b>                             |
| <b>Land-sea breeze</b>            | The complete cycle of diurnal local winds occurring on seacoasts due to differences in surface temperature of land and sea; the land breeze component of the system blows from land to sea, and the sea breeze blows from sea to land. | <b>Metswako ya meya e mesesane</b>                |
| <b>Lapse condition</b>            | Measure of the lapse rate  | <b>Boemo ba tekanyo ya mohatsela ka bophahamo</b> |
| <b>Lapse rate</b>                 | The decrease of an atmospheric variable with height, the variable being temperature, unless otherwise specified.   | <b>Tekanyo ya mohatsela ka bophahamo</b>          |
| <b>Latent heat</b>                | The heat absorbed or released by any substance that undergoes a change of phase.   | <b>Motjheso o ipatileng</b>                       |
| <b>Latent heat flux</b>           | The flux of heat from the Earth's surface to the atmosphere that is associated with evaporation of water at the surface and subsequent condensation of water vapor in the troposphere.   | <b>Phallo ya motjheso o ipatileng sekapakeng</b>  |
| <b>Latent heat of evaporation</b> | Heat released during evaporation by a substance  | <b>Moyafalo ya motjheso o ipatileng</b>           |
| <b>Latent instability</b>         | Atmospheric conditions above the level of free convection when the lapse rate is steeper than moist adiabatic; has been used more as a quantitative measure than a qualitative condition.  | <b>Popeho ya leru e ipatileng</b>                 |

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| Latitude                   | The angular distance along the meridian from point in question to the equator.  | Latitjhute                                   |
| Lee                        | Side of a slope that is opposite to the direction of flow of ice, wind, or water.   | Lehlakore le fureletseng                     |
| Lee troughs                | A pressure trough formed on the lee side of a mountain range in situations where the wind is blowing with a substantial component across the mountain ridge   | Kgatello e tlase ya lehlakore le furaletseng |
| Lee wave {meteorology}     | Any wave disturbance that is caused by, and is therefore stationary with respect to, some barrier in the fluid flow.  | Leqhubu la lehlakore le furaletseng          |
| Leeward                    | The side of a mountain, ridge, or other flow obstacle away from the large-scale or ridge-top flow direction; the downward side; opposite of windward.   | Lehlakore le fureletseng                     |
| Lenticular clouds          | <u>A commonly used term for clouds of the species lenticularis.</u>   | Maru a dithabeng                             |
| Lifting condensation level | The lifted condensation level or lifting condensation level (LCL) is formally defined as the height at which the relative humidity (RH) of an air parcel will reach 100% when it is cooled by dry adiabatic lifting.  | Motheo wa leru                               |
| Lightning                  | Visible discharge of electricity created by thunderstorm.   | lehadima                                     |
| Line squall                | A line or belt of instability at which a set of characteristic changes are encountered.   | Mokoloko wa diaduma                          |
| Local winds                | Winds which, over a small area, differ from those which would be appropriate to the general pressure distribution, or which possess some other peculiarity.   | Meya ya sebaka                               |
| Long wave                  | With regard to atmospheric circulation, a wave in the major belt of westerlies which is characterized by large length (thousands of kilometers) and significant amplitude; the wavelength is typically longer than that of the rapidly moving individual cyclonic and anticyclonic disturbances of the lower troposphere. | Leqhubu le litelele                          |
| Long wave radiation        | The energy leaving the earth as infrared radiation at low energy.   | Motjheso wa lefatshe                         |
| Longitude                  | the angular distance of a point's meridian from the Prime (Greenwich)   | Lonyitjhute                                  |

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|  | Meridian   |   |
| <b>Longitudinal distribution</b>                   | <b>Distribution in a longitudinal direction</b>  | <b>Phepelo ka lonyitjhute</b>                 |
| Longitudinal wave                                  | Waves that have the same direction of vibration as their direction of travel, which means that the movement of the medium is in the same direction as or the opposite direction to the motion of the wave.   | <b>Leqhubu la lonyitjhute</b>                 |
| Lows i.e. coastal low, cutoff lows                 | An area of relatively low atmospheric pressure, esp a depression   | <b>Kgatello e fatshe</b>                      |
| Ludlam-Browning storm Model                        | General model of the airflow within convective storms  | <b>Setshwantsho sa Ludlam-Browning</b>        |
| Map  | Conventionalized representation of spatial phenomena on a plane surface. Unlike photographs, maps are selective and may be prepared to show various quantitative and qualitative facts, including boundaries, physical features, patterns, and distribution. | <b>Mmapa</b>                                  |
| Map projection                                     | Transfer of the features of the surface of the earth or another spherical body onto a flat sheet of paper.   | <b>Ponahatso ya mmapa</b>                     |
| Mapping  | Creation of a map  | <b>Ho rala mmapa</b>                          |
| Maritime boundary                                  | Is a conceptual division of the Earth's water surface areas using physiographic and/or geopolitical criteria   | <b>Moedi wa lewatle le naha</b>               |
| Maritime climate                                   | Is the climate typical of the west coasts at the middle latitudes of most continents, and generally features warm, but not hot summers and cool, but not cold winters, and a relatively narrow annual temperature range                                      | <b>Tlaemete ya lewatleng</b>                  |
| Mean circulation                                   | Average circulation  | <b>Palohare ya potoloho</b>                   |
| Mean sea level (MSL)<br><see also sea level datum> | Is a measure of the average height of the ocean's surface (such as the halfway point between the mean high tide and the mean low tide); used as a standard in reckoning land elevation   | <b>Palohare ya Bophahamo ba Lewatle (PBL)</b> |
| Mean temperature                                   | The average temperature of the air as indicated by a properly exposed thermometer during a given time period, usually a day, month, or year  | <b>Palohare ya themphereitjha</b>             |
| Melting point                                      | A physical process that results in the   | <b>Ntlha ya qhibidiho</b>                     |

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|                         | phase transition of a substance from a solid to a liquid   |   |
| Meridional circulation  | Meteorology) An atmospheric circulation in a vertical plane oriented along a meridian; it consists, therefore, of the vertical and the meridional (north or south) components of motion only.<br>(oceanography) The exchange of water masses between northern and southern oceanic regions | Potoloho dipakeng tsa Leboya le Borwa                   |
| Meridional flow         | Is a meteorological term meaning that the general flow pattern is north to south, or south to north, along the Earth's longitude lines   | Phallo pakeng tsa Leboya le Borwa                       |
| Mesoscale               | Is the study of weather systems smaller than synoptic scale systems but larger than microscale and storm-scale cumulus systems   | Sekala se senyane sa boemo ba lehodimo                  |
| Mesoscale circulations  | Atmospheric circulation in the mesoscale   | Potoloho ya sekala se senyane sa boemo ba lehodimo      |
| Mesoscale effects       | Effects in the mesoscale   | Diphetho tsa sekala se senyane sa boemo ba lehodimo     |
| Meteorological balloon  | A balloon used to lift meteorological measurement instruments aloft  | Balunu ya boemo ba lehodimo                             |
| Meteorological data     | Is the data used to analyse the weather and climate condition of a particular point  | Datha ya boemo ba lehodimo                              |
| Meteorological model    | A model that describes or quantify meteorological behaviour  | Setshwantsho sa boemo ba lehodimo                       |
| Meteorological tide     | A change in water level caused by local meteorological conditions  | Phetoho ya bophamo ba metsi                             |
| Meteorology             | Is the study of weather and climate  | Dithuto tsa boemo ba lehodimo                           |
| Meteosat infrared image | An image in the infrared spectrum from a meteosat satellite  | Setshwantsho sa sathalaete                              |
| Microscale circulation  | <u>The smallest scale of atmospheric motions; smaller than the mesoscale</u>   | Potoloho ya sekala se senyanenyane sa boemo ba lehodimo |
| Mid-Atlantic Ridge      | The largest mountain system on the floor of the Atlantic Ocean, one of the links in the system of mid-oceanic ridges   | Mokwalaba wa bohare ba Atlantic                         |

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| Mid-Indian Ridge                     | A part of the median ridge of the Indian Ocean, between the Tropic of Capricorn and the islands of Amsterdam and St. Paul. It is approximately 2,000 km long and 800 to 900 km wide. It rises 1,000 to 1,500 m above the ocean floor, and the sea above the ridge is less than 3,000 m deep | Mokwalaba wa bohare ba India      |
| Mid-oceanic ridge                    | Is an underwater mountain range, formed by plate tectonics.   | Mokwalaba wa bohare ba lewatle    |
| Mid-latitude disturbances            | Are between <u>23°26'22" North and 66°33'39" North</u> , and between <u>23°26'22" South and 66°33'39" South latitude</u> ,  | Ditshita tsa bohare ba latitjhute |
| Mie scattering                       | Describes the scattering of electromagnetic radiation by a sphere   | Ho qadikana ha Mie                |
| Mixed cloud                          | A cloud containing both water drops (supercooled at temperatures below 0°C) and ice crystals  | Leru le tswakileng                |
| Mixed layer                          | Is a layer in which active turbulence has homogenized some range of depths  | Moalo o tswakileng                |
| Mixing ratio                         | which is defined as the mass of a constituent divided by the total mass of all other constituents in a mixture:   | Tekanyo ya ho tswaka              |
| Models                               | Theoretical representation of a process   | Ditshwantsho                      |
| Moisture conditions                  | Is the term used in meteorology to describe the amount of water vapour in the atmosphere  | Mongobo                           |
| Moisture conservation equation       | Statement of the conservation of water vapor substance  | Palotekanyo ya ho boloka mongobo  |
| Moisture discontinuity/front         | Transition zone between higher and lower moisture content   | Moedi wa mongobo                  |
| Moisture distribution in Urban areas | Distribution of more and less humid air in a metropolitan area  | Phepelo ya mongobo di toropong    |
| Moisture flux                        | Is the horizontal transport of water vapor by the wind  | Phallo ya mongobo                 |
| Monsoon                              | Is traditionally defined as a seasonal reversing wind accompanied by corresponding changes in precipitation   | Monsunu                           |
| Monsoon current                      | Is traditionally defined as a seasonal reversing wind accompanied by corresponding changes in precipitation   | Leqhubu la munsunu                |
| Monsoon rainfall index               | Index to describe variability in the Indian monsoon   |                                   |

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| Monsoon wind                        | Change in wind direction as a result of monsoon conditions  | <b>Moya wa Monsunu</b>                               |
| Monsoon trough                      | Is that portion of the Intertropical Convergence Zone (ITCZ) which extends into or through a monsoon circulation, <sup>[1]</sup><br><sup>[2]</sup> as depicted by a line on a weather map showing the locations of minimum sea level pressure | <b>Kgatello ya moya wa munsunu</b>                   |
| Mountain wind                       | Wind blowing from a mountain  | <b>Moya wa thabeng</b>                               |
| Mozambique Channel                  | Is a portion of the Indian Ocean located between the island nation of Madagascar and southeast Africa, primarily the country of Mozambique  |  |
| Mozambique Current                  | Is an ocean current in the Indian Ocean, usually defined as warm surface waters flowing south along the African east coast in the Mozambique Channel, between Mozambique and the island of Madagascar   | <b>Leqhubu la Mozambiki</b>                          |
| Multi-cell storms                   | Storms consisting of more than one convective cell  | <b>Maru a sefako</b>                                 |
| Multi-layer atmospheric model       | Atmospheric model with more than one layer of the atmosphere  | <b>Setshwantsho sa mealo e mengata ya sepakapaka</b> |
| Multi-layer circulating-ocean model | Ocean circulation model with more than one layer or depth   |  |
| Natal Valley                        | Refers to the Valley of a Thousand Hills  | <b>Kgohlo ya Natale</b>                              |
| Nautical chart                      | Graphic representation of a maritime area and adjacent coastal regions  |  |
| Nautical mile                       | A unit of length used in sea and air navigation, based on the length of one minute of arc of a great circle, especially an international and U.S. unit equal to 1,852 meters (about 6,076 feet). Also called <i>sea mile</i> .                |  |
| Nondivergence                       | The total amount of flux escaping an infinitesimal volume at a point in a vector field, as the net flow of air from a given region  |  |
| North Pole                          | The northernmost point of the earth broadly.  | <b>Leboya</b>  |
| Northerlies                         | Winds blowing from the north  | <b>Meya ya Leboya</b>                                |
| Northern Hemisphere                 | The half of the earth north of the Equator.   | <b>Karolo e ka Leboya</b>                            |

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| Nowcasting                                | A term used to describe the immediate detailed description of current mesoscale weather patterns.  | Maemo a lehodimo a jwale             |
| North Atlantic Central                    | Is a water mass that forms in the North  |                                      |
| North Atlantic Deep Water                 | Is a water mass that forms in the North Atlantic Ocean.  |                                      |
| North Atlantic Ocean                      | <u>Is the second-largest of the world's oceanic divisions</u>  | Lewatle Leboya la Atlantiki          |
| North Equatorial Current                  | Is a significant Pacific and Atlantic Ocean current that flows east-to-west between about 10° north and 20° north  |                                      |
| North Sea                                 | Water mass between Britain and Europe  | Lewatle le Leboya                    |
| Northerly flow                            | Flow in a northerly direction  |                                      |
| Numerical forecasting {meteorology}       | The forecasting of the behaviour of atmospheric disturbances by the numerical solution of the governing fundamental equations of hydrodynamics, subject to observed initial conditions.  | Ho lepa ka dipalo                    |
| Numerical modelling                       | The analysis of coastal processes using computer models  | Ho tshwantsha ka dipalo              |
| Occluded front                            | A composite of two fronts, formed as a cold front overtakes a warm front or quasi-stationary front   | Kopano ya meedi ya meya              |
| Ocean                                     | Interconnected mass of saltwater covering 70.78% of the surface of the earth, often called the world ocean   | Lewatle                              |
| Ocean-atmosphere variability              | Variability in the interaction between the atmosphere and the ocean  |                                      |
| Ocean-atmosphere Interaction              | Field of that explores interactions between the ocean/atmosphere.  | Neheletsano ya lewatle le sepakapaka |
| Oceanic circulation                       | Ocean current:continuous, directed movement of ocean water generated by the forces acting upon this mean flow, such as breaking waves, wind, Coriolis effect, cabbeling, temperature and salinity differences and tides caused by the gravitational pull of the Moon and the Sun | Potoloho lewatleng                   |
| Oceanic climate <see also marine climate> | Type of climate typically found along the west coast at the middle latitudes of some of the world's continent  | Tlaemete ya lewatle                  |
| Offshore                                  | Moving or directed away from the shore:  | Ho tswa lebopong                     |

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|                              | an offshore wind. 2. a. Located at a distance from the shore   |                          |
| Offshore current             | Deep water movements caused by tides or seasonal changes in ocean water level.   | Leqhubu ho tswa lebopong |
| Onshore {e.g. winds}         | Moving or directed toward the shore  | Ho ya lebopong           |
| Onshore current              | Ocean current with an onshore component  | Leqhubu ho ya lebopong   |
| Onshore wind                 | Wind with an onshore component   | Meya Ho ya lebopong      |
| Ozone                        | Tri-atomic oxygen that exists in the Earth's atmosphere as a gas   | Ozounu                   |
| Pacific Ocean                | The largest of the world's oceans, lying between America to the east and Asia and Australasia to the west.   | Lewatle la Phasifiki     |
| Peninsula                    | A piece of land almost surrounded by water or projecting out into a body of water.   | Hlohleng/Hlohla          |
| Perihelion                   | Point nearest the sun in the orbit of a body about the sun   | Pherihilione             |
| Plateau                      | <u>Elevated, level or nearly level portion of the earth's surface, larger in summit area than a mountain mountain, high land mass projecting conspicuously above its surroundings and usually of limited width at its summit. Although isolated mountains are not unusual, mountains commonly form ranges, comprising either a single complex ridge or a series of related ridges.</u> | Plato                    |
| Polar Front {atmospheric}    | Zone of transition between polar and tropical air masses.  | Moedi wa moya wa Phola   |
| Polar jet                    | Is a phenomenon often seen in astronomy, where streams of matter are emitted along the axis of rotation of a compact object  | Jete ya Phola            |
| Polar region                 | Are the areas of the globe surrounding the poles also known as frigid zones.   | Tikoloho ya Phola        |
| Precipitation                | Condensed moisture that falls to the surface of the earth in the form of rain, sleet, snow, or dew   | Ho na                    |
| Pressure {e.g. in sea water} | A type of stress which is exerted uniformly in all directions  | kgatelelo                |
| Pressure field               | A representation of a pressure gradient  | Sebaka sa kgatelelo ya   |

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|   | as isobar contours, parallel to which ocean currents flow  | <b>meya</b>                          |
| <b>Pressure gauge</b>                           | Instrument for measuring the condition of a fluid that is specified by the force the fluid would apply, when at rest, to a unit area               | <b>Semetha kगतello</b>               |
| <b>Pressure gradient</b>                        | <u>Is a physical quantity that describes which direction and at what rate the pressure changes the most rapidly around a particular location</u>   | <b>Phetoho ya kगतello</b>            |
| <b>Pressure gradient force (pressure force)</b> | Is the force which results when there is a difference in pressure across a surface   | <b>Matla a phetoho ya kगतello</b>    |
| <b>Pressure ridge {on ice}</b>                  | <b>Is an ice formation typically found on large frozen lakes or sea ice during the winter</b>  | <b>katoloso ya kगतello ya moya</b>   |
| <b>Pressure surface</b>                         | Atmospheric pressure at a location on Earth's surface  | <b>Kगतello ya moya ya bokahodimo</b> |
| <b>Pressure tendency</b>                        | The character and amount of atmospheric pressure change during a specified period of time, often a three-hour period preceding an observation.     | <b>Phetophetoho ya kगतello</b>       |
| <b>Pressure unit</b>                            | A unit of measuring force per unit area  | <b>Yuniti ya kगतello</b>             |
| <b>Quasi- Biennial Oscillation (QBO)</b>        | Quasiperiodic oscillation of the equatorial zonal wind between easterlies and westerlies in the tropical stratosphere                              |                                      |
| <b>Radar</b>                                    | An object-detection system which uses electromagnetic waves to determine the range, altitude, direction, or speed of both moving and fixed objects | <b>Rada</b>                          |
| <b>Radar imagery</b>                            | Image produced by radar e.g. indicating where precipitation is occurring   | <b>Setshwantsho sa rada</b>          |
| <b>Radiation</b>                                | Emission and propagating and emission of energy in the form of rays or waves   | <b>mahlasedi</b>                     |
| <b>Radiation balance</b>                        | <u>He difference between absorbed and emitted radiation.</u>   | <b>Tekatekanyo ya mahlasedi</b>      |
| <b>Radiation budget</b>                         | The balance between incoming energy from the sun and outgoing thermal and reflected energy from the earth  | <b>tekanyo ya mahlasedi</b>          |
| <b>Radiation thermometer</b>                    | An instrument that determines the blackbody temperature of a substance by measuring its thermal radiation.   | <b>Themometha ya mahlasedi</b>       |
| <b>Radiative inversions</b>                     | Relatively cool layer of air, usually  | <b>Nyuluho ya thempereitjha</b>      |

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|                           | adjacent to a ground surface cooled by net loss of radiation, in which the air temperature increases with height.   | <b>ka bophahamo</b>                     |
| <b>Radiosonde</b>         | A small radio transmitter carried upwards by a balloon, by means of which measurements of pressure, temperature and humidity may be obtained from the upper atmosphere.               | <b>Radiosonto</b>                       |
| <b>Radiosonde profile</b> | Vertical profile of atmospheric variables measured by a radiosonde  | <b>Profaele ya Radiosonto</b>           |
| <b>Rain</b>               | Precipitation in liquid form  | <b>Pula</b>                             |
| <b>Rainfall</b>           | A shower or fall of rain  | <b>pula</b>                             |
| <b>Rainfall duration</b>  | <u>The interval of time elapsed between the beginning and ending of a rainfall event.</u>   | <b>Sehla sa pula</b>                    |
| <b>Rainfall frequency</b> | The probability distribution specifying the exceedance probability of different rainfall depths for a given duration (such as 1 hour,   | <b>Bongata ba pula nakong e itseng</b>  |
| <b>Rainfall rate</b>      | A measure of the intensity of rainfall by calculating the amount of rain that would fall over a given interval of time if the rainfall intensity were constant over that time period. | <b>Sekgahla sa pula nakong e itseng</b> |
| <b>Rain showers</b>       | A brief period of rainfall in which intensity can be variable and may change rapidly. It is often convective in nature.   | <b>Pula</b>                             |
| <b>Reflection</b>         | Is a return of a wave from a surface that it strikes into the medium through which it has travelled.  | <b>Leqhubu la lekgutla</b>              |
| <b>Reflectivity</b>       | The ratio of the energy carried by a wave which is reflected from a surface to the energy carried by the wave which is incident on the surface. Also known as reflectance.            | <b>bokgutlela</b>                       |
| <b>Relative humidity</b>  | The ratio of the vapor pressure to the saturation vapor pressure with respect to water.   | <b>Bongobo</b>                          |
| <b>Remote sensing</b>     | Is the use of a special cameras from airplanes or satellites, either the sun's reflections or the earth's temperature is turned into digital maps of the area.                        | <b>Ho fofonella hole</b>                |
| <b>Satellite imagery</b>  | Images from satellites  | <b>Setshwantsho sa satalaete</b>        |

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| Satellite navigation           | Satellite navigation or sat navigation system is a system of satellites that provide autonomous geo-spatial positioning with global coverage.   | Ditshupiso ka satalaete          |
| Satellite observation          | Image taken by a satellite sensor   | Pontsho ya satalaete             |
| Saturated adiabatic lapse rate | The rate of decrease of temperature with height along a moist adiabat.  | Tekanyo e tsitsitseng ya mongobo |
| Saturated adiabats             | Slightly curved, solid lines on a skew T diagram sloping from lower right to upper left. They are labeled every 2 degrees Celsius and indicate the rate of change of temperature in a saturated air parcel as it rises pseudo-adiabatically. They become parallel to the dry Adiabats at the top of the chart because of the very low moisture content at those levels and stop at 200 mb | Mela etsitsitseng ya mongobo     |
| Saturated air                  | The air that contains maximum amount of moisture that it can hold at particular temperature   | Moya o mongobo                   |
| Saturation                     | The state of water vapour that is in dynamic equilibrium with a plane surface of pure water or ice through balanced fluxes of evaporating and condensing water molecules.   | mongobo                          |
| Saturation deficit             | An index of humidity typically characterized by the difference between the saturation vapour pressure and the actual vapour pressure  | Kgaello ya mongobo               |
| Saturation vapour pressure     | At a point a vapor is said to be saturated, and the pressure of that vapor (usually expressed in mmHg) is called the saturated vapor pressure.  | Kgatelo ya moyafalo ya mongobo   |
| Sea breeze <see also sea wind> | <u>A wind blowing from the ocean towards land caused by the effects of differential heating. In the summer when the land surface is warmer than the ocean, the air over the land heats up more than over the ocean, expands and becomes less dense, and rises. This rising air is replaced, due to the constraints of continuity, with moisture-rich air from over the oceans</u>         | Moya o mosisane                  |
| Sea level                      | Is a measure of the average height of   | Bophahamo ba lewatle             |

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|                              | the ocean's surface (such as the halfway point between the mean high tide and the mean low tide);   |  |
| Sea surface temperature      | The term sea surface temperature is generally meant to be representative of the upper few meters of the ocean as opposed to the skin temperature, which is the temperature of the upper few centimeters.  | <b>Themphereitjha ya bokahodimo ba lewatle</b> |
| Seasonal variation           | A regularly recurring change in the value of a variable   | <b>Phapang ya sehla</b>                        |
| Sensible heat                | Heat that can be measure by a thermometer and thus sensed by humans.  | <b>motjheso</b>                                |
| Sensor( weather instruments) | The component of an instrument that converts an input signal into a quantity that is measured by another part of the instrument.  | <b>Sensa</b>                                   |
| Short wave radiation         | Energy in the visible and near-visible portion of the electromagnetic spectrum.   | <b>Motjheso wa letsatsi</b>                    |
| Solar radiation              | Radiation forthcoming from the sun  | <b>Mahlasedi a letsatsi</b>                    |
| Solstice                     | Either of the two points on the plane of the earth's orbit at which its distance from the celestial equator is greatest (it is reached by the sun each year about June 22 and December 22)  | <b>Solstise</b>                                |
| South Pole                   | The southernmost part of the earth.   | <b>Borwa</b>                                   |
| Southerlies                  | Wind blowing from the south.  | <b>Meya ya Borwa</b>                           |
| Specific humidity            | Is the ratio of water vapor to dry air in a particular mass, and is sometimes referred to as humidity ratio   | <b>mongobo</b>                                 |
| Stability                    | The state being of stable   | <b>Botsitso</b>                                |
| Stratocumulus                | One of the cloud genera. It describes a grey or whitish (or both grey and whitish) patch, sheet or layer of cloud which almost always has dark parts, composed of tessellations, rounded masses, rolls etc., which are non-fibrous and which may or may not be merged | <b>Leru le tswakileng</b>                      |
| Stratopause                  | The stratopause is the level of the atmosphere which is the boundary between two layers, stratosphere and the mesosphere  | <b>Boalo ba Strato</b>                         |

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| <b>Stratosphere</b>           | The region of the atmosphere, lying above the troposphere and below the mesosphere, in which, temperature doesn't decrease with height   | <b>Sepakapaka sa Strato</b>                        |
| <b>Subsidence</b>             | A descending motion of air in the atmosphere, usually with the implication that the condition extends over a rather broad area   | <b>Ho theoha ha moya</b>                           |
| <b>Subsidence inversions</b>  | An increase in temperature with height produced by the adiabatic warming of a layer of subsiding air.  | <b>Nyoloho ya themphereitjha ka ho theoha</b>      |
| <b>Subsiding air</b>          | Body of air that moves downward  | <b>Moya o theohang</b>                             |
| <b>Subtropics</b>             | Related to or typical of an area that is near a tropical area:   | <b>Dibaka tse tlasa ikhweitha/ disaptropiki</b>    |
| <b>Summer moonsoon</b>        | The summer phase of the annual cycle of winds driven by the land-sea thermal contrast.   | <b>Monsunu wa lehlabula</b>                        |
| <b>Summer solstice</b>        | <u>For either hemisphere, the solstice at which the sun is above that hemisphere.</u>  | <b>Solstise ya lehlabula</b>                       |
| <b>sun</b>                    | A luminous gaseous sphere round which the earth moves in a slightly elliptical orbit.  | <b>letsatsi</b>                                    |
| <b>Sunspots</b>               | A relatively dark area on the sun's surface.   | <b>Matheba a letsatsi</b>                          |
| <b>Super cell storms</b>      | An often dangerous convective storm that consists primarily of a single, quasi-steady rotating updraft, which persists for a period of time much longer than it takes an air parcel to rise from the base of the updraft to its summit (often much longer than 10-20 min).   | <b>Maru a sefako</b>                               |
| <b>Surface boundary layer</b> | That thin layer of air adjacent to the earth's surface, extending up to the so-called anemometer level (the base of the Ekman layer); within this layer the wind distribution is determined largely by the vertical temperature gradient and the nature and contours of the underlying surface, and shearing stresses are approximately constant | <b>Boalo ba moedi o kahodimo</b>                   |
| <b>Surface condition</b>      | Conditions close to the surface  | <b>Boemo ba bokahodimo</b>                         |
| <b>Surface inversions</b>     | A temperature inversion based at the earth's surface; that is, an increase of temperature with height beginning at   | <b>Bophahamo ba themphereitjha ho tloha fatshe</b> |

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|                          | the ground level   |                                  |
| Surface layer            | The surface layer is the layer of a turbulent fluid most affected by interaction with a solid surface or the surface separating a gas and a liquid where the characteristics of the turbulence depend on distance from the interface | Moalo o kahodimo                 |
| Surface mixed layer      | Layer at the surface which is homogeneous in some characteristic, e.g. temperature or salinity in the ocean  | Moalo o tswakileng wa bokahodimo |
| Surface n.               | Two-dimensional, topological manifold  | bokahodimo                       |
| Surface pressure         | Is the atmospheric pressure at a point of Earth's surface. It is directly proportional to the mass of air over that point.   | Kgatello ya bokahodimo           |
| Surface temperature      | Temperature of the surface   | Themphereitjha ya bo kahodimo    |
| Surface v.               | To move upwards to reach the surface of the water  | Ho hlahella kahodimo             |
| Surface wind             | The wind measured at a surface observing station; customarily, it is measured at some distance above the ground itself to minimize the distorting effects of local obstacles and terrain   | Moya wa bokahodimo               |
| Synoptic                 | Showing or concerned with the distribution of meteorological conditions over a wide area at a given time   | senoptiki                        |
| Synoptic measurement     | <u>An encoded and transmitted synoptic weather observation.</u>  | Tekanyo ka Senoptiki             |
| Synoptic oceanography    | The study of the physical spatial parameters of the ocean through analysis of simultaneous observations from many stations.  | Dithuto tsa lewatle ka senoptiki |
| Synoptic perturbations   | A disturbance of motion in the synoptic scale air flow   | Tshitiso ya senoptiki            |
| Synoptic scale transport | Transport of e.g. dust over distances in the synoptic scale  | Phodolelo sekaleng sa senoptiki  |
| Temperate                | Having a climate intermediate between tropical and polar; moderate or mild in temperature  | Phodileng                        |
| Temperate region         | A region having a climate intermediate between tropical and polar; moderate or mild in temperature   | Lebatowa le phodileng            |

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| Temperature              | Is the degree of measure of coldness and hotness   | <b>Themphereitjha</b>                            |
| Temperature anomaly      | The deviation of (usually) temperature or precipitation in a given region over a specified period from the long-term average value for the same region.                            | <b>Phapang ya themphereitjha</b>                 |
| Temperature control      | The ability to influence the degree of hotness or coldness   | <b>Taolo ya themphereitjha</b>                   |
| Temperature disturbances | Perturbations in the expected or general distribution of temperature   | <b>Ditshitiso tsa themphereitjha</b>             |
| Temperature distribution | Spatial or temporal variation in temperature   | <b>Phapang ya themphereitjha</b>                 |
| Temperature gradient     | For a given point, a vector whose direction is perpendicular to an isothermal surface at the point, and whose magnitude equals the rate of change of temperature in this direction | <b>Phetoho ya themphereitjha</b>                 |
| Temperature inversion    | Condition in which the temperature of the atmosphere increases with altitude in contrast to the normal decrease with altitude  | <b>Ho nyoloha ya themphereitjha ka bophahamo</b> |
| Temperature layering     | Refers to a temperature inversion, i.e., an increase in temperature with height  | <b>Ho nyoloha ya themphereitjha ka bophahamo</b> |
| Temperature measurement  | Measurement of the hotness of a body relative to a standard scale  | <b>Tekanyo ya themphereitjha</b>                 |
| Temperature profile      | Is a complex set of time-temperature data typically associated with an objected heat up and cool down  | <b>Profaele yathempereitjha</b>                  |
| Temperature section      | Can be e.g. a temperature profile cross-section of the atmosphere  |  |
| Temperature tolerance    | Able to withstand or endure an adverse environmental condition, in this case excessive heat or cold  | <b>Mamelo ya themphereitjha</b>                  |
| Temporal variation       | Variation in time  | <b>Phapang ya nako</b>                           |
| Tephigrams               | Is one of four thermodynamic diagrams commonly used in weather analysis and forecasting  | <b>Thifaekramo</b>                               |

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| Terrestrial radiation  | Long-wave electromagnetic radiation originating from Earth and its atmosphere. It is the radiation emitted by naturally radioactive materials on Earth including uranium, thorium, and radon. | <b>Motjheso wa lefatshe</b>          |
| Thermal equator        | The belt around the earth that is bounded by the mean annual isotherms of 27°C (80°F); also, the middle line of this belt.  | <b>Motjheso wa ikhweitha</b>         |
| Thermal expansion      | Is the tendency of matter to change in volume in response to a change in temperature  | <b>Ho kokomoha ka themphereitjha</b> |
| Thermal gradient       | Is a physical quantity that describes in which direction and at what rate the temperature changes the most rapidly around a particular location   | <b>Phokotseho ya motjheso</b>        |
| Thermal radiation      | Is electromagnetic radiation generated by the thermal motion of charged particles in matter   | <b>Motjheso</b>                      |
| Thermal stratification | Horizontal layers of differing densities produced in a lake by temperature changes at different depths  | <b>Motjheso botebong bo fapaneng</b> |
| Thermal wind           | Vertical shear in the geostrophic wind caused by a horizontal temperature gradient  | <b>Moya o dikolohang</b>             |
| Thermograph            | Is a chart recorder that measures and records both temperature and humidity (or dew point   | <b>Themokrafo</b>                    |
| Thermometer            | Is a device that measures temperature or temperature gradient using a variety of different principles   | <b>Themometha</b>                    |
| Thermopause            | The atmospheric boundary of Earth's energy system, located at the top of the thermosphere   | <b>Boalo ba Themo</b>                |
| Thermosphere           | Is the layer of the Earth's atmosphere directly above the mesosphere and directly below the exosphere   | <b>Sepakapaka sa Themo</b>           |
| Thunder                | Is the sound caused by lightning. <u>Depending on the distance and nature of the lightning, thunder can range from a sharp, loud crack to a long, low rumble (brontide</u>                    | <b>Ho thwathwaretsa/ho duma</b>      |

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| <b>Thunderstorms</b>       | Also known as an electrical storm, a lightning storm, thundershower or simply a storm, is a form of turbulent weather characterized by the presence of lightning and its acoustic effect on the Earth's atmosphere known as thunder | <b>Sefefo sa diaduma</b>      |
| <b>Time series</b>         | Is a sequence of data points, measured typically at successive points in time spaced at uniform time intervals  | <b>Letoto</b>                 |
| <b>Topographic</b>         | Is a type of map characterized by large-scale detail and quantitative representation of relief, usually using contour lines in modern mapping, but historically using a variety of methods  | <b>Bophahamo le botlase</b>   |
| <b>Topographic wave</b>    | <u>Waves with a restoring force arising from variations in depth.</u>   |                               |
| <b>Topography</b>          | Is a field of planetary science comprising the study of surface shape and features of the Earth and other observable astronomical objects including planets, moons, and asteroids.  | <b>Dithuto tsa thopokrafi</b> |
| <b>Tornado</b>             | A tornado is a violently rotating column of air that is in contact with both the surface of the earth and a cumulonimbus cloud or, in rare cases, the base of a cumulus cloud   | <b>Lehodiotswana/kganyapa</b> |
| <b>Trade wind</b>          | Are the prevailing pattern of easterly surface winds found in the tropics, within the lower portion of the Earth's atmosphere, in the lower section of the troposphere near the Earth's equator                                     | <b>Moya wa Botjhabela</b>     |
| <b>Tropic of Cancer</b>    | Also referred to as the Northern tropic, is the circle of latitude on the Earth that marks the most northerly position at which the Sun may appear directly overhead at its zenith.   | <b>Tropiki ya Cancer</b>      |
| <b>Tropic of Capricorn</b> | Is the circle of latitude that contains the subsolar point on the December (or southern) solstice. It is thus the southernmost latitude where the Sun can be directly overhead.   | <b>Tropiki ya Capricorn</b>   |

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| Tropic tide                           | Tide occurring when the moon is near maximum declination; the diurnal inequality is then at a maximum.  |                                       |
| Tropical control                      | Control of the atmosphere in the tropics  |                                       |
| Tropical cyclone <see also hurricane> | Is a storm system characterized by a low-pressure center surrounded by a spiral arrangement of thunderstorms that produce strong winds and heavy rain.  | Lehodiotswana                         |
| Tropical disturbances                 | A migratory, organized region of convective showers and thunderstorms in the Tropics that maintains its identity for at least 24 hours but has no closed wind circulation                             | Ditshitiso tsa tropiki                |
| Tropical easterlies                   | The trade winds when they are shallow and exhibit a strong vertical shear.  | Meya ya Botjhabela wa tropiki         |
| Tropical maritime airstream           | <u>A maritime air mass that develops over or near tropical regions, typically equatorward of 30° latitude.</u>  | Mothjoporo wa moya wa tropiki lewatle |
| Tropical storm                        | A cyclonic storm originating in the tropics and having winds ranging from 39 to 73 miles per hour (34 to 63 knots; 63 to 117 kilometers per hour).  | Sefefo sa tropiki                     |
| Tropical year                         | Is the length of time that the Sun takes to return to the same position in the cycle of seasons, as seen from Earth   | Selemo sa tropiki                     |
| Tropics                               | is a region of the Earth surrounding the Equator  | Ditropiki                             |
| Tropopause                            | The boundary between the troposphere and the stratosphere varying in altitude from approximately 8 kilometers (5 miles) at the poles to approximately 18 kilometers (11 miles) at the equator.        | Boalo ba Tropo                        |
| Troposphere                           | The lowest atmospheric layer, about 18 kilometres (11 miles) thick at the equator to about 6 km (4 miles) at the Poles, in which air temperature decreases normally with height at about 6.5°C per km | Sepakapaka sa Tropo                   |
| Tropospheric models                   | Models of air circulation in the troposphere  |                                       |
| Tropospheric perturbations            | Disorder in the atmospheric flow in the troposphere   | Ditshitiso tsa sepakapaka sa Tropo    |
| Tropospheric winds                    | Winds or air movement in the troposphere  | Meya ya sepakapaka sa Tropo           |

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| Trough  | An elongated region of relatively low atmospheric pressure, often associated with a front   | <b>Kgatello ya moya e tlase</b>             |
| Trough line   | A line along which pressures are lower than in the surroundings and where the cyclonic curvature of the isobars is a maximum.   | <b>Mola wa kgatello ya moya e tlase</b>     |
| Tsunami (tidal wave <Incorrect useage>, seismic sea wave) | <u>Is a series of water waves caused by the displacement of a large volume of a body of water, typically an ocean or a large lake</u>   | <b>Tsunami</b>                              |
| Turbulence  |   | <b>Phethohotshohanyetso phokong ya moya</b> |
| Typhoon (typhon) <see also hurricane>                     | A violent tropical storm or cyclone   | <b>Lehodiotswana</b>                        |
| Ultraviolet   | Of or relating to the range of invisible radiation wavelengths from about 4 nanometers, on the border of the x-ray region, to about 380 nanometers, just beyond the violet in the visible spectrum.   | <b>Mahlasedi a matla</b>                    |
| Ultraviolet radiation                                     | Electromagnetic radiation in the wavelength range 4-400 nanometers; this range begins at the short-wavelength limit of visible light and overlaps the wavelengths of long x-rays (some scientists place the lower limit at higher values, up to 40 nanometers). Also known as ultraviolet light | <b>Mahlasedi a matla a letsatsi</b>         |
| Updraft   | Rapidly rising column of air in a thundercloud.   | <b>Matla a yang hodimo</b>                  |
| Upper layer   | Is the top part of any substance  | <b>Moalo hodimo</b>                         |
| Upper-level airflow                                       | The wind speeds and directions at various levels in the atmosphere above the domain of surface weather observations, as determined by any of the methods of winds aloft observation.  | <b>Phallo ya moya boemong bo hodimo</b>     |
| Upper-level convergence                                   | A cyclonic circulation existing in the upper air; specifically as seen on an upper-level constant-pressure chart.   | <b>Momahano ya moya boemong bo hodimo</b>   |
| Upper-level divergence                                    | An anticyclonic circulation existing in the upper air.  | <b>karohano ya moya boemong bo hodimo</b>   |
| Urban heat island   | Is a metropolitan area that is significantly warmer than its  | <b>Sebaka sa toropo se tjhesang</b>         |

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|                             | surrounding rural areas due to human activities  |                                      |
| <b>Valley</b>               | Is a hollow or surface depression of the earth bounded by hills or mountains   | <b>kgohlo</b>                        |
| <b>Valley inversions</b>    | The opposite or upside down of valley  | <b>Diphetoho tsa kgohlo</b>          |
| <b>Valley wind</b>          | Wind produced by the differential surface temperatures between valleys and crests  | <b>Moya wa kgohlo</b>                |
| <b>Vapour &lt;UK&gt;</b>    | Is a substance whose molecules are dispersed in a gas phase  | <b>Moyafalo</b>                      |
| <b>Vapour pressure</b>      | The pressure exerted by a vapor in equilibrium with its solid or liquid phase.   | <b>Kgatello ya moyafalo</b>          |
| <b>Variability</b>          | The extent, to which a set of observations, such as annual rainfall totals over a number of years, spreads about the mean value.   | <b>Phapano</b>                       |
| <b>Variable adj.</b>        | Likely to change or vary, subject to variation; changeable   | <b>Fapanang</b>                      |
| <b>Variable n.</b>          | A quantity capable of assuming any set of values   | <b>Ho fetohang</b>                   |
| <b>Variance</b>             | Is a measure of how far a set of numbers is spread out   | <b>Palophapano</b>                   |
| <b>Variation</b>            | A different form of something  | <b>Phapang/ho fapana</b>             |
| <b>Veering</b>              | Wind is a wind that turns clockwise with height.   | <b>Moya o dikolohelang ka mojang</b> |
| <b>Veering of wind</b>      | In the Northern Hemisphere, a wind that rotates in a clockwise direction with increasing height; the opposite of backing wind.   | <b>Moya o dikolohelang ka mojang</b> |
| <b>Vernal equinox</b>       | Marks the first day of the season of spring  | <b>Venale</b>                        |
| <b>Vertical circulation</b> | A net transport of ocean water along a definable path  | <b>Ho dikoloha ho tshekalletseng</b> |
| <b>Vertical mixing</b>      | In the atmosphere or oceans, an upward and downward movement of air or water that occurs as a result of the temperature gradients (temperature differences between layers of the fluid). | <b>Ho tswakana ho tshekalletseng</b> |
| <b>Vertical motion</b>      | Is the motion perpendicular to the ground  | <b>Ho tshekalla</b>                  |
| <b>Vertical wind shear</b>  | Change of wind with height   | <b>Phetoho ya tshekallo ya moya</b>  |
| <b>Virtual temperature</b>  | Of a moist air parcel is the temperature   | <b>Themphereitjha e</b>              |

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|                            | at which a theoretical dry air parcel would have a total pressure and density equal to the moist parcel of air  | <b>hlokehang</b>                        |
| <b>Visibility</b>          | The greatest distance in a given direction at which it is just possible to see and identify with the unaided eye, in the daytime, a prominent dark object against the sky at the horizon and, at nighttime, a known, preferably unfocused, moderately intense light source. | <b>Ponahalo</b>                         |
| <b>Vortex</b>              | Mass of fluid in whirling or rotary motion  | <b>Votheke</b>                          |
| <b>Vorticity</b>           | A vector equal to the curl of the velocity of flow  | <b>Ho bidika</b>                        |
| <b>Warm clouds</b>         | Clouds that contain microscopic water droplets  | <b>Maru a futhumetseng</b>              |
| <b>Warm front</b>          | Is the pushing of warm air in both the upper and lower levels of the atmosphere   | <b>Moedi wa mofuthu</b>                 |
| <b>Waste heat</b>          | Sensible heat in gases not subject to combustion and used for processes downstream in a system.   | <b>Motjheso o lahlwang</b>              |
| <b>Water vapour</b>        | Water in the gaseous state, esp when due to evaporation at a temperature below the boiling point  | <b>Phofudi</b>                          |
| <b>Wavelength</b>          | The shortest distance between adjacent wave crests in a train of waves.   | <b>Bolelele ba leqhubu</b>              |
| <b>Weather n.</b>          | The state of the atmosphere, particularly with regard to its immediate effects upon human affairs, plants, animals, and to a lesser extent, upon inanimate objects and processes.   | <b>Boemo ba lehodimo</b>                |
| <b>Weather v.</b>          | To expose to the action of the elements, as for drying, seasoning, or colouring.  | <b>Ho fela/ho fetoha/ho tsofala</b>     |
| <b>Weather forecasting</b> | The reporting of the likelihood of weather conditions for a period of time in the future.   | <b>Bolepi/Ho lepa boemo ba lehodimo</b> |
| <b>Weather maps</b>        | Images of areas that show the state of the atmosphere   | <b>Dimapa tsa boemo ba lehodimo</b>     |
| <b>Westerlies</b>          | <u>The dominant west-to-east motion of the atmosphere, centred over the middle latitudes of both hemispheres.</u>   | <b>Meya ya Bophirima</b>                |

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| Westerly low                   | low pressure system in the westerlies   | <b>Kgatello e tlase ya Bophirima</b>              |
| Westerly trough                | A trough in the westerlies  | <b>Kgatello ya moya Bophirima</b>                 |
| Wet adiabatic lapse rate       | It is the rate at which a parcel of air rises when it is saturated with moisture  | <b>Tekanyo ya phodiso e tsitsitseng e mongobo</b> |
| Wet adiabats                   | When the air is saturated with water vapor, the wet adiabatic lapse rate applies, typically 5 °C/km   | <b>Mela ya kgonahalo ya popeho ya leru</b>        |
| Wet bulb potential Temperature | Is the temperature attained by mass of air brought adiabatically to saturation and then carried along moist-adiabat to 1000 mb (hPa).   | <b>Themphereitjha ya kgonahalo ya mongobo</b>     |
| Wet bulb temperature           | Is the temperature a parcel of air would have if it were cooled to saturation (100% relative humidity) by the evaporation of water into it, with the latent heat being supplied by the parcel. <sup>1</sup> | <b>Themphereitjha ya mongobo</b>                  |
| Wind                           | Air in motion relative to the surface of the earth.   | <b>Moya</b>                                       |
| wind direction                 | The direction from which the wind is blowing.   | <b>Nqa ya moya</b>                                |
| Wind shear                     | Is a difference in wind speed and direction over a relatively short distance in the atmosphere.   | <b>Phetoho ya moya</b>                            |
| wind speed                     | Ratio of the distance covered by the air to the time taken to cover it.   | <b>Lebelo la moya</b>                             |
| Windward                       | Towards, or on the side from which the wind is blowing; upwind.   | <b>Nqeng ya moya</b>                              |
| Year                           | The period during which the earth completes one revolution around the sun.  | <b>Selemo</b>                                     |
| Zonal                          | Latitudinal, that is, easterly or westerly; opposed to meridional.  | <b>Ya lebatowa</b>                                |
| Zonal flow                     | The flow of air along a latitude circle; more specifically, the latitudinal component of existing flow.   | <b>Phallo lebatoweng</b>                          |

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