



INTERNATIONAL HYDROGRAPHIC ORGANISATION

ENTRY LEVEL TIDE COURSE



DEFINITION LIST

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Amplitude

The maximum absolute value attained by a periodic function or phenomenon.

Apogee

The point at which the moon's orbit is furthest from the Earth's gravitational center.

Chart Datum (CD)

The datum to which all soundings on the largest scale navigational chart of the area has been reduced. CD is now lowest astronomical tide (LAT) in all ports in South Africa and Namibia.

Cotidal line

A line connecting all points where high tide occurs at the same time.

Datum

A reference level for altitude and depth. See **Sea level datum (in RSA- Hartebeeshoek)**

Declination

1. Inclination from the vertical.
2. Angular distance from celestial equator.

Diurnal Tides

Having one high tide and one low tide a day. These generally occur at high latitudes.

Ebb and Flood

The alternating seaward and shoreward motion of the tide respectively.

Ebb Current

The outgoing tidal current

Ebb Tide

The outgoing tide.

Friction

The tangential force needed to slide a body in contact with another under normal load. Friction is a surface phenomenon depending essentially upon the physical condition of the surfaces.

Gravitation

The attraction between masses. It is one of the four natural forces; it has infinite range; and it obeys the inverse square law

Gravitational Field

The field created by a mass. The gravitational field of the Earth varies with latitude because of the flattening of the Earth. Earth's gravitational field varies from $9.7803185 \text{ ms}^{-2}$ at the equator to $9.8321776 \text{ ms}^{-2}$ at the poles.

The standard $g = g_0 = 9.80665 \text{ ms}^{-2}$

Gyre

A broad, circular motion of surface water.

Land Levelling Datum

It is the datum to which altitudes above sea level and depths below it are referred (see mean sea level)

Mean Low Water (MLW)

The average of low water levels at a given location over a period of 19 years.

Mean Low Water Neaps (MLWN)

The average HEIGHT of the LOW waters of NEAP tides.

Mean Low Water Springs (MLWS)

The average HEIGHT of the LOW waters of SPRING tides.

Mean High Water (MHW)

The average of high water levels at a given location over a period of 19 years.

Mean High Water Neaps (MHWN)

The average HEIGHT of the HIGH waters of NEAP tides.

Mean High Water Springs

The average HEIGHT of the HIGH waters of SPRING

(MHWS)

tides.

Mean Sea Level (MSL)

The average position of sea level across all tidal periods during a 19 year interval. It is the datum to which altitudes above sea level and depths below it are referred. MSL = Land Levelling Datum (LLD) in RSA.

Mean Tidal Level (MTL)

The mean level between MHW and MLW at a coastal marine location.

Mixed Tides

Tides that contain features of both diurnal and semi-diurnal tides.

Neap Tide

The lowest tide, occurring when the Moon is at quadrature. The lowest high tide and the highest low tide.

Perigee

The point at which the Moon's orbit is closest to the Earth.

Scalar

A quantity that has magnitude but no direction.

Semi-diurnal Tides

Having two high tides and two low tides a day, roughly 6 ¼ hours between each high and low tide.

Spring Tide

Occurs when the Moon is either full or new. The highest high tide and the lowest low tide

Solstice

Either of the two times in the year when the Sun is highest (summer) or lowest (winter) at the local moon

Syzygy

Occurs when the right ascension of the Sun and Moon are co-incident or opposite i.e. in line, and the Moon is NEW or FULL.

Tidal Force

A stress caused on a celestial body by gravitational attraction of another one, the attraction being greatest at the near side of the body and at least at the opposite side.

Tidal Stream

The periodic horizontal movement of the water in conjunction with the tide

Tidal Wave

INCORRECT name for a *storm surge* or *tsunami*

Tide

The periodic change of the ocean and other large water bodies in response to the gravitational attraction of the Moon and, to a lesser degree, of the Sun.

Tide Curve

A graphical representation of the rise and fall of the tide. For normal tides the curve produced approximates a sine curve.

Tides and Tidal Streams

These are the consequences of the gravitational forces of the Sun and the Moon, and the rotation of the Earth/Moon, Earth/Sun system acting on the waters of the Earth.

Tidewater

Water brought in by the tide.

Vector

A quantity having both magnitude and direction.

Water Mass

A large body of seawater identifiable from its temperature and salinity.

References

Emiliani, C: *Dictionary of the Physical Sciences: Terms, Formulas, Data*. Oxford University Press 1987

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