Meteorology Encyclopedia Article

Meteorology

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Meteorology

Meteorology is derived from the Greek words *meteora* meaning things in the air or things above, and *logy* meaning science or discourse. It is a branch of physics concerned with the study and theory of atmospheric phenomena and is frequently equated to atmospheric science. One of the earliest references to this branch of physics is Aristotle's *Meteorologica* written around 340 B.C.

In the modern context meteorology is founded upon the basic physical principles and laws governing the energy and mass exchanges within the earth's **atmosphere** and involves the study of short term variations of atmospheric properties (temperature, moisture, wind) and interactions with the earth's surface. The ability to predict and explain short term changes in the atmosphere from observations and numerical models (using the laws of physics) is an important dimension of meteorology as well. Thus the words meteorologist and forecaster are often used interchangeably to describe someone who can predict the weather.

Meteorologists are trained in observations, instrumentation, data processing, and **modeling** techniques for the purpose of analyzing and predicting trajectories of major weather systems, including their associated temperature, precipitation, wind, and sky conditions. Modern methods include the use of automated surface observation systems, radar, satellites, radiosondes, wind profilers, and high resolution computer models (sometimes called global circulation models) to estimate temporal and spatial variability.

See Also

Acid Rain; Climate; Cloud Chemistry; Hydrologic Cycle; Photochemical Smog