McGraw–Hill Dictionary of PHYSICS and MATHEMATICS

Daniel N. Lapedes

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Editor in Chief

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Preface

The *McGraw-Hill Dictionary of Physics and Mathematics* is intended to provide the high school and college student, librarian, teacher, engineer, researcher, and the general public with the vocabulary of physics, mathematics, and related disciplines such as statistics, astronomy, electronics, and geophysics. Care has been taken to include not only the basic vocabulary but also the most current and specialized terminology.

The more than 20,000 terms and definitions in the *McGraw-Hill Dictionary of Physics and Mathematics* are, in the opinion of the Board of Consulting Editors, fundamental to understanding physics and mathematics. The definitions either were written especially for this work or were drawn from the broader *McGraw-Hill Dictionary of Scientific and Technical Terms* (2d Ed., 1978). The present dictionary is a product of data-base operations, for the terms and definitions selected from the larger work were extracted from a master file stored on magnetic tape. As additional terms were written and reviewed by the consulting editors, they were alphabetically collated with the extracted terms on a new tape. The present dictionary was generated from this tape utilizing computer composition.

Each definition is preceded by an abbreviation identifying the field in which it is primarily used. Some of the fields covered are atomic physics, quantum mechanics, optics, electronics, crystallography, spectroscopy, fluid mechanics, acoustics, physical chemistry, geophysics, and astronomy. When a definition applies to more than one field, it is identified by a more general field. For example, a definition that applies to both crystallography and solid-state physics is assigned to physics.

The usefulness of this dictionary is enhanced by illustrations, cross-references, and the Appendix. There are approximately 700 illustrations to amplify the definitions. Synonyms are given in the alphabetical sequence and are cross-referenced to the term where the definition appears. The Appendix has an explanation of the International System of Units, with conversion tables; tables giving properties of the chemical elements, elementary particles, and of planets and stars; diagrams of crystal lattices; and mathematical and special constants.

An explanation of the alphabetization, cross-referencing, format, field abbreviations, and other information on how to use the dictionary begins on page ix.

The *McGraw-Hill Dictionary of Physics and Mathematics* is the result of the ideas and efforts of the editorial staff and the consulting editors. It is a reference tool which the editors hope will serve the information and communication needs of the community in the fields of physics and mathematics.

Daniel N. Lapedes
Editor in Chief

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How to Use the Dictionary

I. ALPHABETIZATION

The terms in the *McGraw-Hill Dictionary of Physics and Mathematics* are alphabetized on a letter-by-letter basis; word spacing, hyphen, comma, solidus, and apostrophe in a term are ignored in the sequencing. For example, an ordering of terms would be:

Ah
A/in.²
air-core coil
air current
airflow

II. FORMAT

The basic format for a defining entry provides the term in boldface, the field in small capitals, and the single definition in lightface:

term [FIELD] Definition.

A field may be followed by multiple definitions, each introduced by a boldface number:

term [FIELD] **1.** Definition. **2.** Definition. **3.** Definition.

A term may have definitions in two or more fields:

term [ASTROPHYS] Definition. [MATH] Definition.

A simple cross-reference entry appears as:

term *See* another term.

A cross-reference may also appear in combination with definitions:

term [ASTROPHYS] Definition. [MATH] *See* another term.

III. CROSS-REFERENCING

A cross-reference entry directs the user to the defining entry. For example, the user looking up "accumulative error" finds:

accumulative error *See* cumulative error.

The user then turns to the "C" terms for the definition. Cross-references are also made from variant spellings, acronyms, abbreviations, and symbols.

ATR *See* attenuated total reflectance.
at. wt *See* atomic weight.
Au *See* gold.
Tchebycheff *See* Chebyshev.

IV. ALSO KNOWN AS . . . , etc.

A definition may conclude with a mention of a synonym of the term, a variant spelling, an abbreviation for the term, or other such information, introduced by "Also known as . . .," "Also spelled . . .," "Abbreviated . . .," "Symbolized . . .," "Derived from. . . ." When a term has more than one definition, the positioning of any of these phrases conveys the extent of applicability. For example:

    term [ELECTROMAG] **1.** Definition. Also known as synonym. **2.** Definition. Symbolized T.

In the above arrangement, "Also known as . . ." applies only to the first definition: "Symbolized . . ." applies only to the second definition.

    term [ELECTROMAG] **1.** Definition. **2.** Definition. [RELAT] Definition. Also known as synonym.

In the above arrangement "Also known as . . ." applies only to the second field.

    term [ELECTROMAG] Also known as synonym. **1.** Definition. **2.** Definition. [RELAT] Definition.

In the above arrangement, "Also known as . . ." applies to both definitions in the first field.

    term Also known as synonym. [ELECTROMAG] **1.** Definition. **2.** Definition. [RELAT] Definition.

In the above arrangement, "Also known as . . ." applies to all definitions in both fields.

Field Abbreviations

ACOUS	acoustics	HOROL	horology
ADP	automatic data processing	IND ENG	industrial engineering
AERO ENG	aerospace engineering	INORG CHEM	inorganic chemistry
ANALY CHEM	analytical chemistry	MATER	materials
ASTRON	astronomy	MATH	mathematics
ASTROPHYS	astrophysics	MECH	mechanics
ATOM PHYS	atomic physics	MED	medicine
BIOCHEM	biochemistry	MICROBIO	microbiology
BIOL	biology	MINERAL	mineralogy
BIOPHYS	biophysics	NUCLEO	nucleonics
CHEM	chemistry	NUC PHYS	nuclear physics
CHEM ENG	chemical engineering	OPTICS	optics
COMMUN	communications	ORD	ordnance
CONT SYS	control systems	PARTIC PHYS	particle physics
CRYO	cryogenics	PHYS	physics
CRYSTAL	crystallography	PHYS CHEM	physical chemistry
CYTOL	cytology	PHYSIO	physiology
ELEC	electricity	PL PHYS	plasma physics
ELECTR	electronics	QUANT MECH	quantum mechanics
ELECTROMAG	electromagnetism	RELAT	relativity
ENG	engineering	SCI TECH	science and technology
ENG ACOUS	engineering acoustics	SOLID STATE	solid-state physics
FL MECH	fluid mechanics	SPECT	spectroscopy
GEOCHEM	geochemistry	STAT	statistics
GEOD	geodesy	STAT MECH	statistical mechanics
GEOL	geology	SYS ENG	systems engineering
GEOPHYS	geophysics	THERMO	thermodynamics
GRAPHICS	graphic arts		

Scope of Fields

acoustics – The science of the production, transmission, and effects of sound.

aerospace engineering – Engineering pertaining to the design and construction of aircraft and space vehicles and of power units, and dealing with the special problems of flight in both the earth's atmosphere and space, such as in the flight of air vehicles and the launching, guidance, and control of missiles, earth satellites, and space vehicles and probes.

analytical chemistry – Science and art of determining composition of materials in terms of elements and compounds which they contain.

astronomy – The science concerned with celestial bodies and with the observation and interpretation of radiation received in the vicinity of earth from the component parts of the universe.

astrophysics – A branch of astronomy that treats of the physical properties of celestial bodies, such as luminosity, size, mass, density, temperature, and chemical composition, and their origin and evolution.

atomic physics – A branch of physics concerned with the structures of the atom, the characteristics of the electrons and other elementary particles of which the atom is composed, the arrangement of the atom's energy states, and the processes involved in the radiation of light and x-rays.

automatic data processing – The machine performance, with little or no human assistance, of any of a variety of tasks involving informational data; examples include automatic and responsive reading, computation, writing, speaking, directing artillery, and running of an entire factory.

biochemistry – The study of the chemical substances that occur in living organisms, the processes by which these substances enter into or are formed in the organisms and react with each other and the environment, and the methods by which the substances and processes are identified, characterized, and measured.

biology – The science of living organisms, concerned with the study of embryology, anatomy, physiology, cytology, morphology, taxonomy, genetics, evolution, and ecology.

biophysics – The hybrid science involving the methods and ideas of physics and chemistry to study and explain the structures of living organisms and the mechanics of life processes.

chemical engineering – A branch of engineering that deals with the development and application of manufacturing processes, such as refinery processes, which chemically convert raw materials into a variety of products, and that deals with the design and operation of plants and equipment to perform such work.

chemistry – The scientific study of the properties, composition, and structure of matter, the changes in structure and composition of matter, and accompanying energy changes.

communications – The science and technology by which information is collected from an originating source, transformed into electric currents or fields, transmitted over electrical networks or space to another point, and reconverted into a form suitable for interpretation by a receiver.

control systems – The study of those systems in which one or more outputs are forced to change in a desired manner as time progresses.

cryogenics – The science of producing and maintaining very low temperatures, of phenomena at those temperatures, and of technical operations performed at very low temperatures.

crystallography — The branch of science that deals with the geometric description of crystals, their internal arrangement, and their properties.

cytology — The branch of biological science which deals with the structure, behavior, growth, and reproduction of cells and the function and chemistry of cells and cell components.

electricity — The science of physical phenomena involving electric charges and their effects when at rest and when in motion.

electromagnetism — The branch of physics dealing with the observations and laws relating electricity to magnetism, and with magnetism produced by an electric current.

electronics — The branch of science and technology relating to the conduction of electricity through gases or vacuum or through semiconducting materials; concerned with the design, manufacture, and application of electron tubes.

engineering — The science by which the properties of matter and the sources of power in nature are made useful to humans in structures, machines, and products.

engineering acoustics — A field of acoustics that deals with the production, detection, and control of sound by electrical devices, including the study, design, and construction of such things as microphones, loudspeakers, sound recorders and reproducers, and public address systems.

fluid mechanics — The science concerned with fluids, either at rest or in motion, and dealing with pressures, velocities, and accelerations in the fluid, including fluid deformation and compression or expansion.

geochemistry — The study of the chemical composition of the various phases of the earth and the physical and chemical processes which have produced the observed distribution of the elements and nuclides in these phases.

geodesy — A subdivision of geophysics which includes determinations of the size and shape of the earth, the earth's gravitational field, and the location of points fixed to the earth's crust in an earth-referred coordinate system.

geology — The study or science of earth, its history, and its life as recorded in the rocks; includes the study of the geologic features of an area, such as the geometry of rock formations, weathering and erosion, and sedimentation.

geophysics — A branch of geology in which the principles and practices of physics are used to study the earth and its environment, that is, earth, air, and (by extension) space.

graphic arts — The fine and applied arts of representation, decoration, and writing or printing on flat surfaces together with the techniques and crafts associated with each; includes painting, drawing, engraving, etching, lithography, photography, and printing arts.

horology — Science of time measurement and the principles and technology of constructing time-measuring instruments.

industrial engineering — The application of engineering principles and training and the techniques of scientific management to the maintenance of a high level of productivity at optimum cost in industrial enterprises, as by analytical study, improvement, and installation of methods and systems, operating procedures, quantity and quality measurements and controls, safety measures, and personnel administration.

inorganic chemistry — A branch of chemistry that deals with reactions and properties of all chemical elements and their compounds, excluding hydrocarbons but usually including carbides and other simple carbon compounds (such as CO_2, CO, and HCN).

materials — The study of admixtures of matter or the basic matter from which products are made; includes adhesives, building materials, fuels, paints, leathers, and so on.

mathematics — The deductive study of shape, quantity, and dependence; the

two main areas are applied mathematics and pure mathematics, the former arising from the study of physical phenomena, the latter involving the intrinsic study of mathematical structures.

mechanics — The branch of physics which seeks to formulate general rules for predicting the behavior of a physical system under the influence of any type of interaction with its environment.

medicine — The study of cause and treatment of human disease, including the healing arts dealing with diseases which are treated by a physician or a surgeon.

microbiology — The science and study of microorganisms, especially bacteria and rickettsiae, and of antibiotic substances.

mineralogy — The science concerning the study of natural inorganic substances called minerals, including origin, description, and classification.

nuclear physics — The study of the characteristics, behavior, and internal structure of the atomic nucleus.

nucleonics — The technology based on phenomena of the atomic nucleus such as radioactivity, fission, and fusion; includes nuclear reactors, various applications of radioisotopes and radiation, particle accelerators, and radiation detection devices.

optics — The study of phenomena associated with the generation, transmission, and detection of electromagnetic radiation in the spectral range extending from the long-wave edge of the x-ray region to the short-wave edge of the radio region; and the science of light.

ordnance — That military area concerned with supplies, including weapons, ammunition, combat vehicles, and the necessary repair equipment; and with heavy firearms discharged from mounts, including cannons and artillery.

particle physics — The branch of physics concerned with understanding the properties, behavior, and structure of elementary particles, especially through study of collisions or decays involving energies of hundreds of MeV or more.

physical chemistry — The description and prediction of chemical behavior by means of physical theory, with extensive use of graphs and mathematical formulas; main subject areas are structure, thermodynamics, and kinetics.

physics — The science concerned with those aspects of nature which can be understood in terms of elementary principles and laws.

physiology — The branch of biological science concerned with the basic activities that occur in cells and tissues of living organisms and involving physical and chemical studies of these organisms.

plasma physics — The study of highly ionized gases.

quantum mechanics — The modern theory of matter, of electromagnetic radiation, and of the interaction between matter and radiation; it differs from classical physics, which it generalizes and supersedes, mainly in the realm of atomic and subatomic phenomena.

relativity — The study of physics theory which recognizes the universal character of the propagation speed of light and the consequent dependence of space, time, and other mechanical measurements on the motion of the observer performing the measurements; the two main divisions are special theory and general theory.

science and technology — The study of the natural sciences and the application of this knowledge for practical purposes.

solid-state physics — The branch of physics centering on the physical properties of solid materials; it is usually concerned with the properties of crystalline materials only, but it is sometimes extended to include the properties of glasses or polymers.

spectroscopy — The branch of physics concerned with the production, measurement, and interpretation of electromagnetic spectra arising from either emission or absorption of radiant energy by various substances.

statistical mechanics — That branch of physics which endeavors to explain and predict the macroscopic properties and behavior of a system on the basis of the known characteristics and interactions of the microscopic constituents of the system, usually when the number of such constituents is very large.

statistics — The science dealing with the collection, analysis, interpretation, and presentation of masses of numerical data.

systems engineering — The branch of engineering dealing with the design of a complex interconnection of many elements (a system) to maximize an agreed-upon measure of system performance.

thermodynamics — The branch of physics which seeks to derive, from a few basic postulates, relations between properties of substances, especially those which are affected by changes in temperature, and a description of the conversion of energy from one form to another.

Contents

A

a *See* ampere; atto-.
aΩ *See* abohm.
(aΩ)⁻¹ *See* abmho.
A *See* ampere; angstrom.
Å *See* angstrom.
A+ *See* A positive.
aA *See* abampere.
aAcm² *See* abampere centimeter squared.
aA/cm² *See* abampere per square centimeter.
A AND NOT B gate *See* AND NOT gate.
ab- [ELECTROMAG] A prefix used to identify centimeter-gram-second electromagnetic units, as in abampere, abcoulomb, abfarad, abhenry, abmho, abohm, and abvolt.
abac *See* nomograph.
abacus [MATH] An instrument for performing arithmetical calculations manually by sliding markers on rods or in grooves.
abampere [ELEC] The unit of electric current in the electromagnetic centimeter-gram-second system; 1 abampere equals 10 amperes in the absolute meter-kilogram-second-ampere system. Abbreviated aA. Also known as Bi; biot.
abampere centimeter squared [ELECTROMAG] The unit of magnetic moment in the electromagnetic centimeter-gram-second system. Abbreviated aAcm².
abampere per square centimeter [ELEC] The unit of current density in the electromagnetic centimeter-gram-second system. Abbreviated aA/cm².
Abbe condenser [OPTICS] A variable large-aperture lens system arranged substage to image a light source into the focal plane of a microscope objective.
Abbe number [OPTICS] A number which expresses the deviating effect of an optical glass on light of different wavelengths.
Abbe prism [OPTICS] A system used for image erection which is composed of two double right-angle prisms and involves four reflections.
Abbe refractometer [OPTICS] An optical instrument for the measurement of the refractive index of liquids.
Abbe's sine condition [OPTICS] A relationship which must hold to prevent aberration of a mirror or lens from producing a coma.
Abbe's theory [OPTICS] The theory that for a lens to produce a true image, it must be large enough to transmit the entire diffraction pattern of the object.
abcoulomb [ELEC] The unit of electric charge in the electromagnetic centimeter-gram-second system, equal to 10 coulombs. Abbreviated aC.
abcoulomb centimeter [ELEC] The electromagnetic centimeter-gram-second unit of electric dipole moment. Abbreviated aCcm.

ABACUS
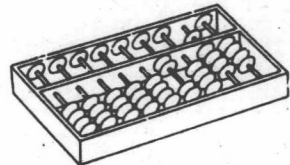
Drawing of an abacus.

abcoulomb per cubic centimeter [ELEC] The electromagnetic centimeter-gram-second unit of volume density of charge. Abbreviated aC/cm³.

abcoulomb per square centimeter [ELEC] The electromagnetic centimeter-gram-second unit of surface density of charge, electric polarization, and displacement. Abbreviated aC/cm².

Abel-Gonchorov interpolation problem [MATH] The problem of finding a polynominal whose ith derivative is equal to the ith derivative of a given n-times differentiable function at x_i for $i = 0, 1, \ldots, n$, where $x_0, \ldots, x_n$ are $n + 1$ points of interpolation.

Abelian domain *See* Abelian field.

Abelian extension [MATH] A Galois extension whose Galois group is Abelian.

Abelian field [MATH] A set of elements $a, b, c, \ldots$ forming Abelian groups with addition and multiplication as group operations where $a(b + c) = ab + ac$. Also known as Abelian domain; domain.

Abelian group [MATH] A group whose binary operation is commutative; that is, $ab = ba$ for each a and b in the group.

Abelian operation *See* commutative operation.

Abelian theorems [MATH] A class of theorems which assert that if a sequence or function behaves regularly, then some average of the sequence or function behaves regularly; examples include the Abel theorem (second definition) and the statement that if a sequence converges to s, then its Cesaro summation exists and is equal to s.

Abelian tower [MATH] A normal tower in which each quotient group G_i/G_{i+1} is an Abelian group.

Abel's formula [MATH] A formula in the theory of differential equations which states that the Wronskian of any two solutions of the self-adjoint linear differential equation $(d/dx)[p(x)y'] + q(x)y = 0$ is equal to a constant divided by $p(x)$.

Abel's identities [MATH] Formulas satisfied by sums of products of any two infinite series, a_i and b_i; they may be written

$$\sum_{i=r} a_i b_i = b_{s+1} A_s - b_r A_{r-1} + \sum_{i=r} (b_i - b_{i+1}) A_i$$

$$\sum_{i=r}^{s} a_i b_1 = b_r A'_r - b_s A'_{s+1} + \sum_{i=r}^{s-1} (b_{i+1} - b_i) A'_{i+1}$$

where $A_r = \sum_{i=1}^{r} a_i$, $A'_r = \sum_{i=r}^{\infty} d_i$.

Abel's inequality [MATH] An inequality which states that the absolute value of the sum of n terms, each in the form ab, where the bs are positive numbers, is not greater than the product of the largest b with the largest absolute value of a partial sum of the as.

Abel's integral equation [MATH] The equation

$$f(x) = \int_a^x u(z)(x - z)^{-a} \, dz \quad (0 < a < 1, \, x \geq a)$$

where $f(x)$ is a known function and $u(z)$ is the function to be determined; when $a = \frac{1}{2}$, this equation has application to Abel's problem.

Abel's matrix [MATH] An infinite matrix $[a_{mn}]$ whose elements are defined by the equation $a_{mn} = m^n/(m + 1)^{n+1}$.

Abel's problem [MATH] The problem which asks what path a particle will follow if it moves under the influence of gravity alone and its altitude-time function is to follow a specific law.
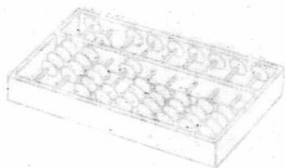
Abel-summable [MATH] The series

$$\sum_{n-1}^{\infty} a_n$$

is said to be Abel-summable to s if the function

$$f(x) = \sum_{n-1}^{\infty} a_n x^n, \, 0 \le x < 1,$$

has s as a limit on the left at $x = 1$. Also known as A-summable.

Abel theorem [MATH] **1.** A theorem stating that if a power series in z converges for $z = a$, it converges absolutely for $|z| < |a|$. **2.** A theorem stating that if a power series in z converges to $f(z)$ for $|z| < 1$ and to a for $z = 1$, then the limit of $f(z)$, as z approaches 1, is equal to a. **3.** A theorem stating that if the three series with nth term a_n, b_n, and $c_n = a_0b_n + a_1b_{n-1} + \cdots + a_nb_0$, respectively, converge, then the third series equals the product of the first two series.

aberration [ASTRON] The apparent angular displacement of the position of a celestial body in the direction of motion of the observer, caused by the combination of the velocity of the observer and the velocity of light. [OPTICS] *See* optical aberration.

abfarad [ELEC] A unit of capacitance in the electromagnetic centimeter-gram-second system equal to 10^9 farads. Abbreviated aF.

abhenry [ELEC] A unit of inductance in the electromagnetic centimeter-gram-second system of units equal to 10^{-9} henry. Abbreviated aH. Also known as centimeter.

abmho [ELEC] A unit of conductance in the electromagnetic centimeter-gram-second system of units equal to 10^9 mhos. Abbreviated $(a\Omega)^{-1}$. Also known as absiemens (aS).

Abney effect [OPTICS] A shift in the apparent hue of a light which occurs as colored light is desaturated by the addition of white light.

Abney law [OPTICS] The shift in apparent hue of spectral color that is desaturated by addition of white light is toward the red end of the spectrum if the wavelength is below 570 nanometers and toward the blue if it is above.

Abney mounting [SPECT] A modification of the Rowland mounting in which only the slit is moved to observe different parts of the spectrum.

abnormal glow discharge [ELECTR] A discharge of electricity in a gas tube at currents somewhat higher than those of an ordinary glow discharge, at which point the glow covers the entire cathode and the voltage drop decreases with increasing current.

abnormal reflections [ELECTROMAG] Sharply defined reflections of substantial intensity at frequencies greater than the critical frequency of the ionized layer of the ionosphere.

abnormal series *See* anomalous series.

abohm [ELEC] The unit of electrical resistance in the centimeter-gram-second system; 1 abohm equals 10^{-9} ohm in the meter-kilogram-second system. Abbreviated aΩ.

abohm centimeter [ELEC] The centimeter-gram-second unit of resistivity. Abbreviated aΩcm.

A bomb *See* atomic bomb.

abrupt junction [ELECTR] A pn junction in which the concentration of impurities changes suddenly from acceptors to donors.

abscissa [MATH] One of the coordinates of a two-dimensional coordinate system, usually the horizontal coordinate, denoted by x.

absiemens *See* abmho.

absolute convergence [MATH] That property of an infinite series (or infinite product) of real or complex numbers if the

ABERRATION
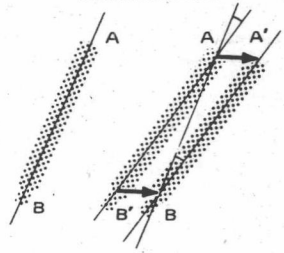
The aberration of light as seen in astronomy. Starlight arriving along AB and seen in this direction by a stationary observer (left) appears to the observer in transverse motion AA′ (right) to come from the direction AB′ (or A′B). (*From G. de Vaucouleurs, Discovery of the Universe, 1957; reprinted by permission of Faber and Faber Ltd.*)

series (product) of absolute values converges; absolute convergence implies convergence.

absolute density *See* absolute gravity.

absolute deviation [STAT] The difference, without regard to sign, between a variate value and a given value.

absolute efficiency [ENG ACOUS] The ratio of the power output of an electroacoustic transducer, under specified conditions, to the power output of an ideal electroacoustic transducer.

absolute electrometer [ELEC] A very precise type of attracted disk electrometer in which the attraction between two disks is balanced against the force of gravity.

absolute error [MATH] In an approximate number, the numerical difference between the number and a number considered exact.

absolute expansion [THERMO] The true expansion of a liquid with temperature, as calculated when the expansion of the container in which the volume of the liquid is measured is taken into account; in contrast with apparent expansion.

absolute gain of an antenna [ELECTROMAG] Gain in a given direction when the reference antenna is an isotropic antenna isolated in space. Also known as isotropic gain of an antenna.

absolute gravity [CHEM] Density or specific gravity of a fluid reduced to standard conditions; for example, with gases, to 760 mmHg (101,325 newtons per square meter) pressure and 0°C temperature. Also known as absolute density.

absolute humidity [PHYS] The ratio of the mass of water vapor in a sample of air to the volume of the sample.

absolute inequality *See* unconditional inequality.

absolute linear momentum *See* absolute momentum.

absolute luminosity [OPTICS] The luminosity of an object expressed in units of fundamental quantities.

absolute magnitude [ASTROPHYS] 1. A measure of the brightness of a star equal to the magnitude the star would have at a distance of 10 parsecs from the observer. 2. The stellar magnitude any meteor would have if placed in the observer's zenith at a height of 100 kilometers. [MATH] The absolute value of a number or quantity.

absolute momentum [METEOROL] The sum of the (vector) momentum of a particle relative to the earth and the (vector) momentum of the particle due to the earth's rotation. Also known as absolute linear momentum.

absolute motion [PHYS] The motion of an object described by its measurement in a frame of reference that is preferred over all other frames.

absolute permeability [ELECTROMAG] The ratio of the magnetic flux density to the intensity of the magnetic field in a medium; measurement is in webers per square meter in the meter-kilogram-second system. Also known as induced capacity.

absolute pitch [ACOUS] The pitch of a musical tone expressed as the frequency of the sound wave of that tone.

absolute potential vorticity *See* potential vorticity.

absolute pressure [PHYS] The pressure above the absolute zero value of pressure that theoretically obtains in empty space or at the absolute zero of temperature, as distinguished from gage pressure.

absolute scale *See* absolute temperature scale.

absolute space-time [PHYS] A concept underlying Newtonian mechanics which postulates the existence of a preferred reference system of time and spatial coordinates; replaced in relativistic mechanics by Einstein's equivalency principle. Also known as absolute time.

absolute specific gravity [MECH] The ratio of the weight of a