

**McGRAW-HILL
DICTIONARY OF
SCIENTIFIC AND
TECHNICAL
TERMS**

**Sixth
Edition**

McGraw-Hill

New York Chicago San Francisco
Lisbon London Madrid Mexico City
Milan New Delhi San Juan Seoul Singapore Sydney Toronto

On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meteorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment. (Image copyright © Dr. Luann Becker. Reproduced with permission.)

Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Prokaryotes*, Release 2, Springer-Verlag, January 2002; D. W. Linzey, *Vertebrate Biology*, McGraw-Hill, 2001; J. A. Pechenik, *Biology of the Invertebrates*, 4th ed., McGraw-Hill, 2000; *U.S. Air Force Glossary of Standardized Terms*, AF Manual 11-1, vol. 1, 1972; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; *A DOD Glossary of Mapping, Charting and Geodetic Terms*, Department of Defense, 1967; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, National Aeronautics and Space Administration, 1965; *Glossary of Stinfo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *ADP Glossary*, Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology, White Sands Missile Range, New Mexico*, National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission.

**McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS,
Sixth Edition**

Copyright © 2003, 1994, 1989, 1984, 1978, 1976, 1974 by The McGraw-Hill Companies, Inc. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

2 3 4 5 6 7 8 9 0 DOW/DOW 0 8 7 6 5 4 3

ISBN 0-07-042313-X

Library of Congress Cataloging-in-Publication Data

McGraw-Hill dictionary of scientific and technical terms--6th ed.

p. cm.

ISBN 0-07-042313-X (alk. paper)

1. Science--Dictionaries. 2. Technology--Dictionaries. I. Title: Dictionary of scientific and technical terms.

Q123.M15 2002
503--dc21

2002026436

private branch exchange [COMMUN] A telephone exchange serving a single organization, having a switchboard and associated equipment, usually located on the customer's premises; provides for switching calls between any two extensions served by the exchange or between any extension and the national telephone system via a trunk to a central office. Abbreviated PBX. { 'prī-vət 'brʌnʃ iks,ʧʌŋj }

private branch exchange access line [ELEC] Circuit that connects a main private branch exchange (PBX) to a switching center. { 'prī-vət 'brʌnʃ iks,ʧʌŋj 'ak,sɛs 'lɪn }

private data [COMPUT SCI] Data that are open to a single user only. { 'prī-vət 'dɑd-ə }

private exchange [COMMUN] Telephone exchange serving a single organization and having no means for connecting to a public telephone system. { 'prī-vət iks,ʧʌŋj }

private library [COMPUT SCI] An organized collection of programs and other software that is the property of a single user of a computer system and is not generally available to other users. { 'prī-vət 'lɪbrər-ē }

private line [COMMUN] A line, channel, or service reserved solely for one user. { 'prī-vət 'lɪn }

private line arrangement [COMPUT SCI] The structure of a computer system in which each input/output device has a set of lines leading to the central processing unit for the device's own private use. Also known as radial selector. { 'prī-vət 'lɪn ə,rʌŋj'mənt }

private line service [COMMUN] Service provided by United States common carriers engaged in domestic or international wire, radio, and cable communications for the intercity communications purposes of a customer; this service is provided over integrated communications pathways, including facilities or local channels, which are integrated components of intercity private line services, and station equipment between specified locations for a continuous period or for regularly recurring periods at stated hours. { 'prī-vət 'lɪn sər-vəs }

private pack [COMPUT SCI] A disk pack assigned exclusively to one application or one user so that the operating system does not try to allocate space on the device to others. { 'prī-vət 'pæk }

private stream [HYD] Any stream which diverts part or all of the drainage of another stream. { 'prī-vət 'strɪm }

privileged direction [OPTICS] One of two mutually perpendicular directions for the plane of polarization of a beam of plane-polarized light falling on a plate of anisotropic material such that the light which emerges from the plate is also plane-polarized. { 'prɪv-ə'lɪd dər-ek-shən }

privileged instruction [COMPUT SCI] A class of instructions, usually including storage protection setting, interrupt handling, timer control, input/output, and special processor status-setting instructions, that can be executed only when the computer is in a special privileged mode that is generally available to an operating or executive system, but not to user programs. { 'prɪv-ə'lɪd ɪn'strʌk-shən }

privileged mode See master mode. { 'prɪv-ə'lɪd mɔd }

PRML technique See partial-response maximum-likelihood technique. { 'pɛrjər'em'el tek,nɛk }

proaccelerin [BIOCHEM] A labile procoagulant in normal plasma but deficient in the blood of patients with parahemophilia; essential for rapid conversion of prothrombin to thrombin. Also known as factor V; labile factor. { 'prɔ-ak'sel-ə-rən }

proactive interference [PSYCH] The situation in which old memories inhibit the learning of new memories. { 'prɔ,ak-tɪv 'ɪn-tər'fɪr-əns }

proamniion [EMBRYO] The part of the embryonic area at the sides and in front of the head of the developing amniote embryo, which remains without mesoderm for a considerable period. { 'prɔ'am-nɛ,ɪn }

Proanura [PALEON] Triassic forerunners of the Anura. { 'prɔ'an-yə-rə }

probabilistic automaton [COMPUT SCI] A device, with a finite number of internal states, which is capable of scanning input words over a finite alphabet and responding by successively changing its internal state in a probabilistic way. Also known as stochastic automaton. { 'prɔb-ə'bɪlɪs'tɪk ɔ'tɔm-ə,tɔn }

probabilistic sampling [STAT] A process in which the laws of probability determine which elements are to be included in a sample. { 'prɔb-ə'bɪlɪs'tɪk 'sʌm-plɪŋ }

probabilistic sequential machine [COMPUT SCI] A probabilistic automaton that has the capability of printing words probabilistically, over a finite output alphabet. Also known as stochastic sequential machine. { 'prɔb-ə'bɪlɪs'tɪk sɪ'kwɛn-ʃəl mə'shɛn }

probability [STAT] The probability of an event is the ratio of the number of times it occurs to the large number of times that take place; the mathematical model of probability is a positive measure which gives the measure of probability a value 1. { 'prɔb-ə'bɪl-əd-ē }

probability amplitude See Schrödinger wave function. { 'prɔb-ə'bɪl-əd-ē 'am-plə,tʊd }

probability current density [QUANT MECH] A vector component normal to a surface gives the probability that a particle will cross a unit area of the surface during a unit time. { 'prɔb-ə'bɪl-əd-ē 'kə-rənt 'den-sə-d-ē }

probability density [QUANT MECH] The square of the absolute value of the Schrödinger wave function for a particle at a given point; gives the probability per unit volume of finding the particle at that point. { 'prɔb-ə'bɪl-əd-ē 'den-sə-d-ē }

probability density function [STAT] A real-valued function whose integral over any set gives the probability that a random variable has values in this set. Also known as density function. { 'prɔb-ə'bɪl-əd-ē 'den-sə-d-ē 'fʌŋk-shən }

probability deviation See probable error. { 'prɔb-ə'bɪl-əd-ē 'dɛ-vɛj-ə-shən }

probability distribution See distribution. { 'prɔb-ə'bɪl-əd-ē 'dɪs-trɪb-yʊt-shən }

probability forecast [METEOROL] A forecast of the probability of occurrence of one or more of a mutually exclusive set of weather contingencies, as distinguished from a set of categorical statements. { 'prɔb-ə'bɪl-əd-ē 'fɔr,kast }

probability mass function [STAT] A function which gives the relative frequency of each possible value of the random variable in an experiment involving a discrete set of outcomes. Abbreviated p.m.f. { 'prɔb-ə'bɪl-əd-ē 'mʌs,'fʌŋk-shən }

probability measure [MATH] The measure on a probability space. { 'prɔb-ə'bɪl-əd-ē 'mezʃ-ər }

probability paper [STAT] Graph paper with one axis specially ruled to transform the distribution function of a specified function to a straight line when it is plotted against the variable as the abscissa. { 'prɔb-ə'bɪl-əd-ē 'pə-pər }

probability ratio test [STAT] Testing a simple hypothesis against a simple alternative by using the ratio of the probability of each simple event under the alternative to the probability of the event under the hypothesis. { 'prɔb-ə'bɪl-əd-ē 'rɪo 'test }

probability sampling [STAT] A method of sampling from a finite population where the probability of each set of units being selected is known. { 'prɔb-ə'bɪl-əd-ē 'sʌm-plɪŋ }

probability space [MATH] A measure space such that the measure of the entire space equals 1. { 'prɔb-ə'bɪl-əd-ē 'speɪs }

probability theory [MATH] The study of the mathematical structures and constructions used to analyze the probability of a given set of events from a family of outcomes. { 'prɔb-ə'bɪl-əd-ē 'θɪ-ə-rɪ }

probable [ORD] 1. An instance in which a hostile aircraft is probably destroyed. 2. The hostile aircraft so designated. { 'prɔb-ə'bəl }

probable error [STAT] The error that is exceeded by a variable with a probability of 1/2. Also known as probable deviation. { 'prɔb-ə'bəl 'er-ər }

probable maximum precipitation [METEOROL] The theoretically greatest depth of precipitation for a given location that is physically possible over a particular drainage area at a certain time of year; in practice, this is derived over the period by storm transposition and moisture adjustment to observed storm patterns. { 'prɔb-ə'bəl 'mʌks-ɪm-əm 'pɪ-sɪ-pɪ-tʃən }

probable ore [MIN ENG] 1. A mineral deposit believed to be developed ore but not yet proved by development. 2. An indicated ore. { 'prɔb-ə'bəl 'ɔr }

probable reserves [PETRO ENG] Primary production reserves based on limited evidence, but not proved by a commercial oil-production rate. { 'prɔb-ə'bəl rɪ'zɛvz }

proband [GEN] The clinically affected individual in a family whom a family is found that can be used to study the inheritance