INSTITUT DE FRANCE
Académie des sciences

Theodor **Hänsch**

Élu Associé étranger le 21 juin 2005, dans la section de Physique

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Pionnier de la spectroscopie laser de haute résolution et de la manipulation d'atomes par la lumière, Theodor Hänsch, né en 1941 en Allemagne, est Directeur de l'Institut Max-Planck d'Optique quantique et Professeur à l'Université de Munich. Prix Nobel de physique en 2005, il est l'inventeur de méthodes de mesure des fréquences des lasers atteignant une précision de quinze chiffres significatifs. La technique des "peignes de fréquence" qu'il a développée ouvre la voie à des études sur la stabilité dans le temps des constantes de la nature ainsi qu'à la mise au point d'horloges atomiques extrêmement précises susceptibles d'améliorer les performances du système de positionnement global (GPS).

Theodor Hänsch, Director of Max Planck Institut für Quantenoptik and Professor at Ludwig-Maximilians-Universität, is a pioneer of high resolution laser spectroscopy and of the manipulation of atoms with light. He has invented methods to measure the frequencies of lasers with an accuracy of fifteen digits. The "frequency comb" technique which he has developed opens the way to studies of the stability of the constants of nature over time, as well as to the development of extremely accurate atomic clocks which could lead to an improved global positioning system.

Curriculum vitae

1969	Doctor degree, University of Heidelberg (Germany)
1970	Assistant Professor, University of Heidelberg, Institute of Applied Physics
1970-1972	Nato Postdoctoral Fellow, Stanford University (USA)
1972-1975	Associate Professor, Stanford University
1978	Visiting Professor, Collège de France, Paris
1975-1986	Professor of Physics, Stanford University
1986-present	Director, Max Planck Institut für Quantenoptik, Garching (Germany)
	Professor, Ludwig-Maximilians-Universität, München (Germany)
1992	Visiting Professor, École normale supérieure, Paris
2001-2002	Chairman, Physics Department, Ludwig-Maximilians-Universität, München
2003-2004	Executive Director, Max Planck Institut für Quantenoptik, Garching

Membership

1983 Member of the American Academy of Arts and Sciences
1991 Member of the Bayerische Akademie der Wissenschaften
2002 Foreign Associate of the National Academy of Sciences (USA)
2002 Foreign Associate of the Accademia Nazionale dei Lincei (Italy)
2005 Member of the Berlin-Brandenburg Akademie der Wissenschaften

Awards

1977 Alexander von Humboldt Senior US Scientist Award
1980 Prix Otto Klung Prize, Freie Universität, Berlin
1983 Cyrus B. Cornstock Prize, National Academy of Sciences (USA)
1983 Herbert P. Broida Prize, American Physical Society
1985 William F. Meggers Award, Optical Society of America
1986 Michelson Medal, Franklin Institute
1987 Italgas Prize for Research and Innovation (Italy)
1988 Gottfried Wilhelm Leibniz Preis, Deutsche Forschungsgemeinschaft
1989 King Faisal International Prize for Science (Saudi Arabia)
1995 Einstein Medal for Laser Science
1996 Arthur L. Schawlow Prize for Laser Science, American Physical Society
1998 Philip Morris Research Prize (atomic clock)
2000 Stern-Gerlach Medal, Deutsche Physikalische Gesellschaft
2000 Arthur L. Schwalow Award, Laser Institute of America
2000 Philip Morris Research Prize (atom laser)
2001 Quantum Electronics and Optics Prize, European Physical Society - SUNAMCO Medal, 2001 International Union of Pure and Applied Physics
2002 Matteucci-Medal, Accademia Nazionale delle Scienze
2002 Alfred Krupp Prize for Science
2003 Bundesverdienstkreuz 1. Klasse
2005 I.I. Rabi Award, Institute of Electrical and Electronics Engineers
2005 Frederic Ives Medal, Optical Society of America
2005 Otto-Hahn Prize for Chemistry and Physics
2005 Nobel Prize in Physics

Le 27 novembre 2006