



Nobel Prize in Physics to Quantum Optics

The scientists awarded are Roy J. Glauber, John L. Hall and Theodor W. Hansch

November 03, 2005

This year's Nobel Prize in Physics is awarded to three scientists in the field of optics.

The Royal Swedish Academy of Sciences has decided to award with one half to **Roy J. Glauber**, Harvard University (USA), for his contribution to the quantum theory of optical coherence, and one half jointly to **John L. Hall**, JILA, University of Colorado and National Institute of Standards and Technology (USA) and **Theodor W. Hansch**, Max-Planck-Institut für Quantenoptik, and Ludwig-Maximilians-Universität (Germany), "for their contributions to the development of laser-based precision spectroscopy, including the optical frequency comb technique."

Glauber described the behaviour of light particles. He could explain the fundamental differences between hot sources of light such as light bulbs, with a mixture of frequencies and phases, and lasers which give a specific frequency and phase. His contribution was to form the basis for the development of Quantum Optics up to the present

Hall and Hansch have been awarded half the Nobel Prize for their contributions to the development of laser-based precision spectroscopy, with particular attention to the recent development of the "optical frequency comb technique, " with which precise readings can be made of light of all colors.

This technique makes it possible to study the stability of the constants of nature over time and to develop extremely accurate clocks and improved Global Positioning System, or GPS technology.

Prof. Jürgen Eschner, group leader in Quantum Optics at ICFO, talked with La Vanguardia newspaper to point out and explain the contribution made by the three Nobel Prize of this year.

Read the news linking with the [PDF article in La Vanguardia](#)



Roy J. Glauber
 photo J. Reed



John L. Hall
 photo CU/L Harwood



Theodor W. Hansch
photo M. Urban