



ACADÉMIE
DES SCIENCES
INSTITUT DE FRANCE



INTERNATIONAL YEAR OF
Quantum Science
and Technology



**Société Française
de Physique**

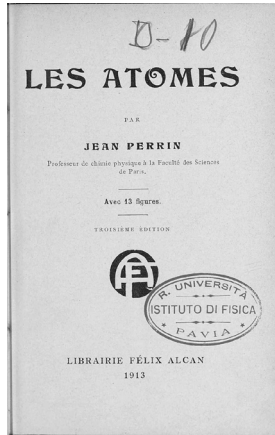
Exploring the Quantum World

February 5th, 2025, Académie des sciences, Paris, France
Christophe Salomon

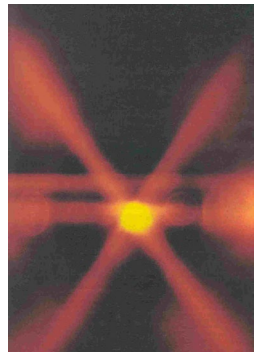


Nobel laureates, l'Académie des sciences and Quantum science

- 1903 Henri Becquerel, Pierre et Marie Curie: radioactivity
- 1908 Gabriel Lippmann: color photography
- 1926 Jean Perrin, rays X as particles, atomistic theory
- 1929 Louis de Broglie: wave nature of the electron, wave-particle duality
- 1966 Alfred Kastler: optical pumping and microwave resonances
- 1970 Louis Néel, antiferromagnétism
- 1991 Pierre-Gilles De Gennes, magnetism, superconductivity, liquid crystals, soft matter
- 1992 Georges Charpak: ionizing wire chamber for high energy physics
- 1997 Claude Cohen-Tannoudji: laser cooling and trapping
- 2007 Albert Fert: giant magneto-resistance, spintronics
- 2012 Serge Haroche: manipulation of individual quantum objects
- 2018 Gérard Mourou: short and intense laser pulses
- 2022 Alain Aspect: entanglement
- 2023 Anne Lhuillier, Pierre Agostini: high harmonic generation and attosecond lasers



1913



First Quantum revolution

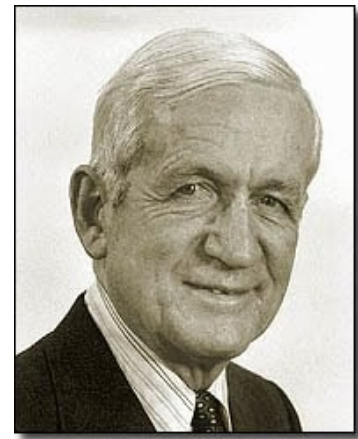
Second Quantum revolution

From spectroscopy to atomic clocks and navigation

1938 I. Rabi molecular beam resonance spectroscopy

1940-1949 Cesium atomic clocks, Rabi, Ramsey, Essen & Parry, 1955

1973 Clocks onboard satellite navigation systems, GPS, GALILEO,....



A revolution in society and Science

8 orders of
Magnitude
in 75 years

