PREVIOUS RECIPIENTS

2001
2003
2004
2005
2006
2008

"Felice Pietro Chisesi and Caterina Tomassoni" Prize

Awardee : Prof. **Edward Lorenz**

Professor Emeritus at the Department of Earth, Atmosferic, and Planetary Sciences
Massachussets Institute of Technology

Motivation:

For his discovery, careful study, and realization of the importance of the "butterfly effect", namely, the sensitivity on the whole range of scales of the solutions of non-linear equations to an initial small scale perturbation. Edward Lorenz's research on the predictability of physical systems, namely atmospheric models, can be traced back to the publication in 1963 of his paper
"Deterministic non-periodic flow" in the Journal of Atmospheric Sciences, which marked the beginning of the new field of chaos theory and complex system dynamics.
The paper gave rise to a new paradigm in physics and to significant changes in many other fields like medicine, geology, economics, etc, by demonstrating that certain classes of deterministic systems are formally equivalent to unpredictable systems. The application of Lorenz's work to weather modeling led lately to a relevant improvement in the weather forecast through what is known as 'ensemble" forecast.

"Caterina Tomassoni and Felice Pietro Chisesi" Prize

Awardee: Prof. **Gerald Gabrielse**

George Vasmer Leverett Professor of Physics, Harvard University

Motivation:

For the measurement of the g-factor of the electron to an accuracy of 2.8 x 10-13 and for low energy antimatter physics, which included sensitive probes of the baryon/antibaryon asymetry and whose pioneering methods opened the way to antihydrogen production and future spectroscopy.
In particular, his measurement of the dimensionless electron magnetic moment, the electron g-value, is 15 times more accurate than the measurement performed by Hans Dehmelt twenty years earlier. Such precision opens the way to QED tests of unprecedented accuracy and allows the testing of possible finite size and composite structure of the electron, not yet detected. In addition, Gerald Gabrielse was the first to propose the use of low-energy antiprotons and methods to produce cold antihydrogen atoms that could be trapped for spectroscopic analyses. In 2002, two teams (one led by Gabrielse) produced antihydrogen during the positron cooling of antiprotons within a nested Penning trap – a method and device that Gabrielse had invented.