SNPD Prizes 2019

The **2019 EPS Statistical and Nonlinear Physics Prize** is awarded to

- **Sergio Ciliberto** "***for his seminal contributions over a wide range of problems in statistical and nonlinear physics, in particular for performing groundbreaking new experiments testing Fluctuation Theorems for injected power, dissipated heat, and entropy production rates, as well as investigating experimentally the connection between dissipated heat and the Landauer bound, thus demonstrating a link between information theory and thermodynamics.***"

  Sergio Ciliberto studied physics in Florence and was a researcher at the Istituto Nazionale Ottica in Florence 1982-1990. He also spent some time as a postdoctoral researcher and visiting scientist in Orsay, at the University of Pennsylvania (Haverford College), and at the Center of Nonlinear Studies at Los Alamos National Laboratory. In 1991 he was appointed at the Laboratoire de Physique at ENS Lyon, being the Director of the Lab from 2000-2006. Part of his research was supported by a large ERC grant with the title "Out of equilibrium fluctuations in confined phase transitions". From 2012-2014 he was Vice President of ENS Lyon in charge of research.

  Sergio Ciliberto is an outstanding experimentalist whose work had a profound impact on several areas of statistical and nonlinear physics. Over his scientific career, he has explored many very different physical systems, and was able to make very significant contributions over a wide range of problems. He has tested many innovative theoretical ideas in real physical situations, which led him to demonstrate the relevance of several deep concepts. He initially worked in quantum optics, then later he investigated order-chaos transitions in nonlinear systems, and worked in fluid turbulence, as well as on crack dynamics in heterogeneous materials and aging of amorphous materials. He then continued with his ground-breaking investigations on fluctuations of the injected and dissipated power in out-of-equilibrium systems. This was followed by his investigations of the connections between information theory and thermodynamics (experimental tests of the Landauer principle). Sergio Cliberto also performed one of the first measurements of Liapunov exponents from an experimental time series, at a time when this topic was entirely new in the scientific community.