



Press release – 27 September 2017

**Thibault Damour, permanent professor at IHES,
awarded France's highest scientific distinction.**

Thibault Damour receives the 2017 CNRS Gold Medal for his key contributions to the discovery of gravitational waves.

Born in Lyon, on February 7th, 1951, Thibault Damour joins the École normale supérieure in Paris, in 1970. After obtaining his PhD from the University of Paris VI in 1974, he works for two years as a post-doc at Princeton University (USA). Between 1977 and 1989, he works as a CNRS researcher and is recruited as a permanent professor in theoretical physics at the Institut des Hautes Études Scientifiques (IHES) in 1989.

Thibault Damour is a theoretical physicist working on relativistic gravity (Einstein's theory of general relativity), cosmology, and the extensions of relativistic gravity suggested by string theory. He made innovative contributions to the theory of black holes, the relativistic motion of binary pulsars, the emission of gravitational waves, the evolution and coalescence of various binary systems of compact bodies (black holes, neutron stars), as well as to several aspects of primordial cosmology. His work has created new links between Einstein's theory of general relativity and observations.

In particular, he introduced, with various collaborators, in 2000 at IHES a new method, called *Effective One Body* (EOB), which gave the first description of the complete gravitational signal emitted by the coalescence of two black holes. This analytical approach (later completed by the results of numerical simulations) was used by the LIGO-Virgo collaboration to extract from the noise and analyze in terms of physical parameters (mass, spin) the gravitational wave signals that have been detected since September 2015.

The EOB method has been recently extended to the description of the gravitational signal emitted by the coalescence of binary neutron stars until they become so close that they collide. This precise theoretical description could allow one to obtain information on the equation of state of nuclear matter from the gravitational signal.

Exceptionally, this year the CNRS awards two Gold Medals: one to Thibault Damour for his “*theoretical works (...) that were key to analyzing the data coming from gravitational-wave detectors*”; the other one to Alain Brillet, a “*visionary in the development of gravitational waves detectors, [and] one of the fathers of the European experiment Virgo*”.

The Institute sincerely congratulates Thibault Damour on obtaining this prestigious distinction. “*We are very proud of this Gold Medal. Beyond the recognition of Thibault's extraordinary contribution to contemporary physics, this prize acknowledges the essential role of theoretical research in major scientific discoveries*” said the director, Emmanuel Ullmo

The Institut des Hautes Études Scientifiques (IHES)

IHES is a private research centre dedicated to mathematics, theoretical physics and related topics. The Institute has a limited number of permanent professors, mathematicians and theoretical physicists, and every year it welcomes about 200 visitors from all over the world. Research freedom, independence and interdisciplinarity are IHES core values.

The CNRS Gold Medal

The CNRS Gold medal is the highest scientific research award in France. It is presented annually by the French National Centre for Scientific Research (CNRS). Since its creation in 1954, it is awarded to a scientific personality whose work has made an exceptional contribution to the vitality and influence of French research.

For more information :

[Mini website](#) on gravitational waves

[Cours de l'IHES](#) on gravitational waves given by Thibault Damour

Public lecture [on gravitational waves](#) given by Thibault Damour (in French)

Press contact: Marie Caillat, director of communication +33 1 60 92 66 67 • caillat@ihes.fr

L'IHES, membre fondateur de  université
PARIS-SACLAY