Erwin Schrödinger Lecture

Tuesday, December 19, 2017 – 5 p.m.

Boltzmann Lecture Hall, ESI, Boltzmanngasse 9, Vienna

Sascha Husa

Universitat de les Balears

Gravitational Wave Astronomy: Recent Results and Challenges for the Future

In this talk I will first summarize recent observations of gravitational wave events that are consistent with mergers of binary systems of black holes and of neutron stars, and discuss what we have learned so far from gravitational wave observations, and what we hope to learn in the future, regarding astrophysics and fundamental physics. I will then discuss the current plans for future ground and space based gravitational wave observatories, and the theoretical and computational challenges that need to be overcome in order to best interpret the data that such detectors will record.

Sascha Husa, an alumnus of the University of Vienna, is one of the leading experts in the field of numerical relativity. In his research, he solves the Einstein equations with numerical methods to study astrophysical phenomena, such as gravitational waves emitted from black hole mergers. Sascha Husas calculations played an important role in the first detection and analysis of gravitational waves by the LIGO cooperation, a discovery that was awarded the 2017 Nobel Prize in Physics.

The Erwin Schrödinger Lectures are directed towards a general audience of mathematicians and physicists. In particular it is an intention of theses lectures to inform non-specalists and graduate students about recent developments and results in some area of mathematics or physics.

The lecture will be followed by a reception in the spirit of Advent.

Christoph Dellago
Director