

## GR 10: Invited Talks 5

Time: Wednesday 15:00–15:40

Location: H 2013

**Invited Talk**

GR 10.1 Wed 15:00 H 2013

**Neutron-star binaries: Einstein’s richest laboratory** —

•LUCIANO REZZOLLA — Max-Von-Laue Str. 1, 60438 Frankfurt, Germany

If black holes represent one the most puzzling results of Einstein’s theory of gravity, neutron stars in binary system are arguably its richest laboratory, where gravity blends with astrophysics and particle

physics. I will overview the rapid recent progress made in modelling these systems and show how the dynamics of a binary of magnetized neutron stars leads to a rapidly-spinning black hole surrounded by a hot and highly-magnetized torus. I will also discuss how this process can be used to enhance the chances of gravitational-wave detection, infer the properties of the equation of state for matter at nuclear densities, and possibly model short gamma-ray bursts.