

GR 7: General Relativity

Time: Wednesday 11:00–11:45

Location: GR-H2

Invited Talk GR 7.1 Wed 11:00 GR-H2
Numerical Relativity and Gravitational Wave Observations
— ●HARALD PFEIFFER — Max-Planck-Institute for Gravitational
Physics

Gravitational wave detectors have observed nearly 100 mergers of compact object binaries since the ground-breaking first observation in 2015. Direct supercomputer calculations are the only means to access the

highly dynamic and nonlinear merger phase of such binaries. The simulations elucidate the behavior of space-time and matter in the extreme conditions near merger and play a crucial part in detection and analysis of gravitational wave observations. This talk introduces the techniques of numerical relativity and surveys some recent results. The talk then highlights the importance of numerical relativity simulations for gravitational wave astronomy.