**Friday, February 14, 2020**

**4:10 – 5:00 PM**

**Barnard Hall (EPS) 103**

**Precision gravitational wave astronomy with**

**next generation waveform models**

**Michael Pürrer**

**Max Planck Institute for Gravitational Physics**

https://www.aei.mpg.de/person/44214/2168

**Abstract:**

In the past few years we have opened a new window to the Universe in the observation of gravitational waves (GW) that are emitted in the merger of compact binaries. The analysis of these binary black hole and binary neutron star coalescences have taught us a great deal about binary properties. This has only been possible through our knowledge of what the GWs look like, as predicted by General Relativity, and, crucially, through accurate and fast models of the GWs as a function of masses, spins and other binary parameters. I will summarize observations we made during the first two observing runs of LIGO & Virgo. While the GW models have made great strides over the past decade, I will provide a reality check on the status quo and motivate further needed extensions and improvements so that we can reap the scientific benefits of future ground-based gravitational wave detectors, such as the Einstein Telescope and Cosmic Explorer, and the LISA detector in space.

# Host:

# Neil Cornish

***\* Refreshments served in the Barnard (EPS) second floor atrium at 3:45 \****