

## Gravitational-wave astrophysics

*Thursday, 30 August 2018 10:30 (30 minutes)*

Ground-based gravitational-wave detectors have opened new avenues to explore the universe. The detections of several binary black holes have allowed, for the first time, to access these objects without needs for photons, and to directly measure their masses and spins. The spectacular joint detection of gravitational waves and light from the binary neutron star system GW170817 has shown the potential of multi-messenger astrophysics and yielded an independent measurement of the Hubble constant. In this talk, I will focus on what we can expect next, as the detectors approach their design sensitivity. I will also report on the scientific potential of the next-generation of gravitational-wave detectors, which could detect all the binary black holes in the universe.

**Presenter:** Dr VITALE, Salvatore (Massachusetts Institute of Technology)

**Session Classification:** Plenary Session