

Plenary Talk

PV III Tue 9:00 ZHG011

The Dawn of Multimessenger Astrophysics — ●ANNA FRANCK-OWIAK — Ruhr-Universität Bochum, Germany

The recent discoveries of high-energy astrophysical neutrinos and gravitational waves have opened new windows of exploration to the Universe. Neutrinos can escape dense environments from where photons can not reach us and travel undeflected through the Universe. In combination with measurements of electromagnetic radiation, neutrinos can help to solve long-standing problems in astrophysics and probe

physics in extreme environment that otherwise are hardly accessible to laboratory experiments. They are key to unraveling the origin of cosmic rays.

Recent multimessenger observations reveal TeV-PeV neutrino production in interactions of cosmic rays in our own galaxy and in distant galaxies when massive stars explode or the central supermassive black hole accretes large amounts of matter. This talk will summarize recent discoveries and give an outlook on new experiments and possible future breakthroughs.