Contribution ID: 41

Type: Invited speaker

Neutrinos from NS-NS mergers

Thursday 26 September 2019 14:30 (20 minutes)

The mergers of neutron stars are expected to produce high-energy neutrinos through particle acceleration inside the relativistic jets. In this talk, I will discuss future prospects for high-energy neutrino detection coincident with gravitational waves. We consider two neutrino production scenarios. One is the late-time engine activity of the short gamma-ray bursts. High-energy neutrinos are efficiently produced in the jets of the prolonged activity owing to their lower Lorentz factor. The other is choked jet systems where the relativistic jets fail to penetrate the merger ejecta. In this case, photons are absorbed by the ejecta, while neutrinos escape from the system and can be detected. For both scenarios, the future project, such as IceCube-Gen2, will likely detect the neutrinos coincident with gravitational waves.

Primary author: Dr KIMURA, Shigeo (Tohoku University)Presenter: Dr KIMURA, Shigeo (Tohoku University)Session Classification: Multi-messenger physics