

第34回 RESCEU コロキウム



東京大学大学院理学系研究科 附属ビッグバン宇宙国際研究センター

日 時: 2019年1月21日(月) 16:00 ~ 17:00

場 所: 理学部4号館1階ピロティ RESCEU セミナー室

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Electromagnetic counterparts to GW170817 and astrophysical implications

The neutron star merger GW170817 is the first gravitational-wave (GW) event accompanied by electromagnetic radiation: prompt gamma-rays, uv/optical/IR kilonova, and broadband non-thermal afterglow. The signatures of kilonova in GW170817 are consistent with the picture that a substantial amount of material is ejected at merger and the ejecta is composed of r-process nuclei. In particular, the light curve from 0.5 to 70 days after the merger can be explained well with the radioactive power of r-process nuclei. I will discuss what we can learn from this observation about the composition of the ejecta and also discuss the nebular emission of kilonovae. The second part of my talk, I will focus on the superluminal jet in GW170817 observed by VLBI. Using the afterglow light curve data and VLBI images, the jet's Lorentz factor, kinetic energy, and viewing angle are determined. I will discuss the implication of this jet to short gamma-ray bursts and how these observations can improve the GW distance measurement, which leads to the improvement of the local Hubble constant measurement from the GW-only analysis.

興味をお持ちの方の聴講を歓迎致します。お茶とお菓子を用意しております。