第16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:　2017 年 4 月 20 日(木) 13:00 ～14:00

場　所:　理学部 4 号館 1 階ピロティ RESCEU セミナー室

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Probing Extreme Gravity with Gravitational Waves

The binary black hole merger events recently discovered by the LIGO and Virgo Collaboration offer us excellent testbeds for exploring extreme (strong and dynamical-field) gravity that was previously inaccessible. In this talk, I will first review the current status of testing such gravity with GW150914 and GW151226, in particular, explaining how well one can probe various fundamental pillars in General Relativity. I will then describe what comes next in terms of testing gravity with gravitational waves. Regarding black-hole based tests of gravity, I will discuss how one can stack multiple ringdown events to probe black hole no-hair property. Regarding neutron star based tests of gravity, I will use approximate universal relations ("I-Love-Q relations") among certain neutron star observables that are almost insensitive to the unknown stellar internal structure, and describe how one can extract extreme gravity information by combining future gravitational wave and binary pulsar observations. I will conclude with a summary of important future directions.

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。