Recent Progresses in Gravitational Wave Sciences and Perspectives

November 19, 2018 - November 20, 2018

Center for Theoretcial Physics of the Universe

Scientific Program

Although talks for overviews and research works will be presented by invited speakers, we also leave some time slots for talks upon requests. Those who would like to present any talks or ideas related to gravitational waves should contact with Dr. Gungwon Kang (gwkang@kisti.re.kr) by October 31, 2018.

Venue: IBS Headquarters in Daejeon, Korea (Rm B438 in the Theory Building,

https://www.ibs.re.kr/eng/sub01_01_04_01.do)

19 November, Monday

Session I: Results and issues from GW observations

Chair: Sanghyeon Chang (IBS-CTPU)

11:00 – 11:10 Hyung-Mok Lee (KASI & SNU): Opening remarks

17:30 – 18:10 Alex Nielsen (AEI Hannover, Video presentation via Skype): Tests of GR in strong fields from GW observations

11:10 – 11:50 Hyung-Mok Lee (KASI & SNU): Asrophysical implications of the gravitational wave observations

11:50 – 12:30 Hyunkyu Lee (Hanyang U.): Implications of GW observations for neutron star physics and extreme matter

12:30 – 14:00 Lunch (IBS Cafeteria on 1st Floor)

Session II: Development of new detectors

Chair: Gungwon Kang (KISTI)

14:00 – 14:40 Ho Jung Paik (U. of Maryland): SOGRO, a superconducting tensor detector for mid-frequency gravitational waves

14:40 – 15:20 Jean-Paul Ampuero (Universite Cote d'Azur & Caltech): Earthquake Early Warning based on future gravity gradiometers

15:20 – 15:50 Coffee break

15:50 -16:30 Il Hung Park (Sungkyunkwan U.): A Non-laser Interferometry for Gravitational Wave Detection

16:30 – 17:10 Kyuman Cho (Sogang U.): Study on a light polarization gravitational wave detector

17:10 – 17:30 Kimitake Hayasaki (Chungbuk Nat'l U.): Detection of gravitational waves from merging supermassive black holes through tidal disruption flares

17:30 - 18:10 Alex Nielsen (AEI Hannover, Video presentation via Skype): Tests of GR in strong fields from GW observations

18:30 – 20:30 Banquet (Hall in front of Rm B438, IBS-CTPU)

20 November, Tuesday

Session III: Frontier studies

Chair: John J. Oh (NIMS)

9:00 – 9:40 Young-Min Kim (UNIST): Tidal deformability of neutron stars with realistic nuclear energy density functionals

9:40 – 10:00 Yeong-Bok Bae (NIMS): Binary black hole coalescence and GW detection with SOGRO

10:00 – 10:20 Chan Park (KISTI): Detection of stochastic gravitational waves in SOGRO

10:20 – 10:50 Coffee break

10:50 – 11:30 Ryusuke Jinno (IBS-CTPU): Gravitational waves from first-order phase transitions: an analytic approach

11:30 – 12:00 Gansukh Tumurtushaa (IBS-CTPU): Primordial Gravitational Waves from Inflationary Models with the Gauss-Bonnet term

12:00 – 13:30 Lunch (IBS Cafeteria on 1st Floor)

Chair: Ryusuke Jinno (IBS-CTPU)

13:30 – 14:10 Myungshin Im (SNU): EM follow-up study of GW sources and prospects

14:10 – 14:50 Sunghoon Jung (SNU): Probing Dark Matter at LIGO and mid-band: GW fringes

14:50 – 15:30 Jinn-Ouk Gong (KASI): Cosmological aspects of primordial GWs

15:30 – 16:00 Coffee break

16:00 – 16:20 Han Gil Choi (SNU): Gravitational waves: New probe of dark matter

16:20 – 16:40 Young-Hwan Hyun (KISTI): Exact amplitudes of six polarization modes for GWs

16:40 – 17:00 Toshinori Matsui (KIAS): Exploring first order phase transition in extended Higgs models by the complementarity of gravitational wave observations and collider measurements

17:00 – 17:20 Gungwon Kang (KISTI): Detection of GWs by using quantum effects