粒子天体物理与宇宙学教育部重点实验室系列报告

Seminar of Key Laboratory for Particle Astrophysics and Cosmology, Ministry of Education

Gravitational wave astronomy and cosmology — the dawn has arrived!

Speaker：Misao Sasaki

Kavli Institute for the Physics and Mathematics of the Universe The University of Tokyo

Academic awards：

- ***1997 Chushiro Hayashi Prize,***
- ***1997 Ronbun-Sho (Prize for Seminal Papers)***
- ***2008 Humboldt Research Award***
- ***2010 Daiwa Adrian Prize***
- ***2011 Honorary Professor***

Abstract：

Since the first detection of gravitational waves from coalescing binary black holes by LIGO in September 2015, we have entered an era of gravitational wave astronomy. Furthermore, a merger of binary neutron stars was detected for the first time in August 2017, and it was an unexpected happy surprise that the observation was made not only by gravitational waves but by electromagnetic waves with frequencies ranging from gamma rays to radio waves.

In addition to these tremendous achievements, a lot of efforts have been made toward detecting primordial gravitational waves coming from the very early universe. These developments will upgrade the current level of cosmology to an unprecedented level where gravitational waves will play an indispensable role, which I call "gravitational wave cosmology".

In this talk, I review the rapidly developing field of gravitational wave astronomy, and discuss current and future perspectives of gravitational wave cosmology.

Time: July 26, 2019 (Friday) 15:00

Location: Room 410, Tsung-Dao Lee Library