

Gravitational waves from the early Universe

Friday, 16 October 2015 11:00 (45 minutes)

The gravitational wave is a useful probe of the early Universe which directly carries information of the epochs all the way up to the inflationary era. There are a number of production mechanisms of gravitational waves in the early Universe such as: (i) quantum tensor perturbation generated during inflation, (ii) gravitational waves generated by second-order perturbation of density fluctuations, (iii) those generated by bubble collision after first-order phase transitions, (iv) those created by self-ordering of multi-component scalar fields after a global symmetry breaking, and (v) gravitational from topological defects, especially from oscillating cosmic strings. I will talk about some of the above production mechanisms and discuss their implications to cosmology of the early Universe, in particular, the possibility to determine thermal history using the power spectrum of gravitational waves.

Presenter: Dr YOKOYAMA, Jun'ichi (RESCEU)

Session Classification: Plenary Session