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# Gravitational waves and their footprints from primordial interactions

*Monday, 21 January 2019 11:00 (45 minutes)*

Detection of tensor mode fluctuations at the largest cosmological scales is often expected to provide a robust evidence of inflation and to fix the inflationary energy scale. Such direct connection is however applicable only when gravitational waves (GWs), the source of tensor perturbations, are effectively decoupled from other energy contents. However, spin-1 particles can be produced efficiently during inflation due to interactions, and their energy is then transferred to GWs already during inflation, giving a new source of GWs. Moreover, such GWs can have non-trivial correlations with curvature perturbations, which would otherwise be absent. I demonstrate detectable GW signals and discuss potentially observable correlations between tensor and scalar perturbations.

**Presenter:** Dr NAMBA, Ryo

**Session Classification:** physics of primordial universe