
Contribution ID: **98** Type: **Plenary/Parallel talk**

# Inflation with two-form field: the production of primordial black holes and gravitational waves

*Monday, 22 August 2022 14:40 (20 minutes)*

Antisymmetric tensor field (two-form field) is a ubiquitous component in string theory and generally couples to the scalar sector through its kinetic term. In this paper, we propose a cosmological scenario that the particle production of two-form field, which is triggered by the background motion of the coupled inflaton field, occurs at the intermediate stage of inflation and generates the sizable amount of primordial black holes as dark matter after inflation. We also compute the secondary gravitational waves sourced by the curvature perturbation and show that the resultant power spectra are testable with the future space- based laser interferometers.

**Primary author:** Dr OBATA, Ippei (Max-Planck-Institute for Astrophysics)

**Co-authors:** Prof. FUJITA, Tomohiro (Waseda Institute for Advanced Study, Waseda University); Dr NAKATSUKA, Hiromasa (Institute for Cosmic Ray Research, The University of Tokyo); YOUNG, Sam (Instituut-Lorentz for Theoretical Physics, Leiden University)

**Presenter:** Dr OBATA, Ippei (Max-Planck-Institute for Astrophysics)

**Session Classification:** Parallel Session Lecture Room

**Track Classification:** Inflation and the primordial universe