Contribution ID: **68** Type: **Poster**

Exploring the Degree of Freedom Beyond Standard Model via Primordial Black Hole Evaporation with Memory Burden Effect

Tuesday, 19 August 2025 20:25 (5 minutes)

Primordial black holes (PBHs) formed during the early universe provide a unique probe of physics beyond the Standard Model. In this study, we investigate the impact of additional degrees of freedom from supersymmetry (SUSY) particles and the memory burden effect (MBE) on the evaporation process of PBHs formed via first-order phase transitions. By analyzing how these factors influence the PBH lifetime, we aim to provide insights into potential new physics and constraints on early universe phase transitions. Our findings may offer indirect evidence supporting the existence of first-order phase transitions, contributing to a deeper understanding of high-energy physics and cosmology.

Primary authors: LIN, Leah Ya-Ling (National Tsing Hua University); TSENG, Po-Yen (National Tsing Hua University)

Presenter: LIN, Leah Ya-Ling (National Tsing Hua University)

Session Classification: Poster session