Contribution ID: **665** Type: **Talk in the parallel session**

Interior of Typical Black Holes

Thursday, 8 July 2021 16:50 (20 minutes)

We study an evaporating spherically-symmetric black hole that is statistically most likely to form. That can be considered as a black hole formed adiabatically in a heat bath. We construct it by solving conformal matter fields and the semiclassical Einstein equation in a self-consistent manner. Solving the trace component (using the 4D Weyl anomaly) and a general condition of static radial energy flow without specifying explicit boundary conditions determines uniquely the physical static metric for the interior. This represents a dense object with a near-Planck-scale curvature and a surface (instead of a horizon) just outside the Schwarzschild radius. When the object is taken out of the heat bath, it evaporates emitting a Hawking-like radiation. This should be the typical black hole in quantum theory.

Primary author: Dr YOKOKURA, Yuki (RIKEN)

Co-author: Prof. KAWAI, Hikaru (National Taiwan University)

Presenter: Dr YOKOKURA, Yuki (RIKEN)

Session Classification: Quantum Fields

Track Classification: Early Universe: Quantum Fields