

# The Cosmological Evolution of a Black Hole

[Yohji Sasaki](#), [Keigo Yamazaki](#), [Yuta Hayashi](#)

## Abstract

We study the cosmological evolution in the vicinity of a black hole using the method of the Euclidean solution of the Einstein-Hilbert equation. We find the Einstein-Hilbert solution of the Einstein-Hilbert equation and study the cosmological evolution in the vicinity of the black hole using the cosmological evolution formula. We present the results of our study and provide a detailed discussion of the cosmological evolution.