

## Abstract

For a spherically symmetric distribution of (homogeneous) matter, loop quantum gravity leads to a modification of evolution equation of the gravitational collapse. This gives rise to resolution of the classical singularity that form at collapse end-state. In this talk, we review recent developments in investigation of quantum gravity effects on late time stages of gravitational collapse and the formation of the possible non-singular black hole exterior. In particular, we consider a spherically symmetric model for gravitational collapse whose classical final state is a Schwarzschild black hole. In this framework, we investigate how quantum gravity modifies the exterior Schwarzschild geometry in Planck era. We further obtain a threshold mass, which is comparable with the Planck mass, for the formation of a very small non-evaporating (quantum) black hole.