Contribution ID: **19** Type: **not specified**

Catalytic Creation of Baby Bubble Universe with Small Positive Cosmological Constant

Tuesday, 3 December 2019 14:45 (15 minutes)

We investigate the decay of metastable de Sitter, Minkowski and anti-de Sitter vacua catalyzed by a black hole and a cloud of strings. We apply the method to the creation of the four dimensional bubble universe in the five dimensional anti-de Sitter spacetime recently proposed by Banerjee, Danielsson, Dibitetto, Giri and Schillo. We study the bounce action for the creation and find that the bubble with very small cosmological constant, of order $\Lambda^{(4)}/M_4^4 \sim 10^{-120}$, is favored by the catalysis by assuming appropriate mass scales of the black hole and the cloud of strings to reproduce the present energy densities of matter and radiation in the bubble universe.

Presenter: Prof. OOKOUCHI, Yutaka

Session Classification: Short talks