Contribution ID: **14** Type: **not specified**

Masahiro Kawasaki : Particle physics models for primordial black hole formation

Thursday, 5 December 2019 10:00 (45 minutes)

We present two scenarios for primordial black hole (PBH) formation. One is PBH formation by Affleck-Dine mechanism which produces high baryon bubbles after inflation. Those high baryon bubbles produce high density contrasts and collapse, which leads to formation of PBHs. This scenario can account for LIGO PBHs or seeds for supermassive BHs. The other scenario is PBH formation from non-topological solitons. We perform lattice simulation for oscillon formation and show that oscillons may produce density fluctuations large enough for PBH formation. This scenario could account for a significant fraction of dark matter.