Contribution ID: **21** Type: **not specified**

Masato Yamanaka "Revisit the relic density of Higgs-portal dark matter"

Tuesday, 7 November 2023 17:25 (25 minutes)

We revisit the relic density of Higgs portal dark matter (DM) with taking into account the Higgsplosion effect. We minimally extend the standard model by introducing a fermionic DM, and derive the Boltzmann equation with the DM annihilation channel of high-multiplicity final state. It is shown that the balance of Higgsplosion and Higgspersion effects derives a window function, and the final state multiplicity of DM annihilation is uniquely fixed as a function of Higgs self-coupling. Numerical calculation of the Boltzmann equation demonstrates the enhancement of effective reaction rate at the freeze out regime compared with well-studied DM scenario which annihilates into Higgs-pair.

Session Classification: Short talks