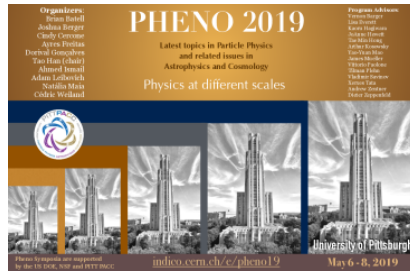


Phenomenology 2019 Symposium



Contribution ID: 763

Type: parallel talk

Enhancing electroweak phase transition in the spontaneous Z_2 -breaking singlet extension of the SM

Tuesday 7 May 2019 17:00 (15 minutes)

Singlet extensions of the Standard Model (SM) provide unique test of the paradigm of strongly first order electroweak phase transition (EWPhT). We study the real singlet extension of the SM with spontaneous Z_2 -breaking, and its impact on the strength of the electroweak phase transition as well as the corresponding phenomenology. We find various phase transition patterns rendering a strongly first order EWPhT. After including the corresponding one loop zero temperature and thermal corrections, we identify the regions of parameter space with a strong EWPhT, that require a rather light real scalar. Phenomenologically, Higgs exotic decays, together with constraints from precision measurement of the Higgs properties at the LHC, provide the ultimate probe of such an SM extension.

Summary

Authors: WANG, Yikun (THE UNIVERSITY OF CHICAGO); CARENA LOPEZ, Marcela Silvia (Fermi National Accelerator Lab. (US)); LIU, Zhen (U of Maryland)

Presenter: WANG, Yikun (THE UNIVERSITY OF CHICAGO)

Session Classification: Higgs III