Contribution ID: **84** Type: **Oral presentation using Zoom**

Analyzing the Higgs potential in gauge-Higgs unification with a flat extra dimension

Wednesday, 27 October 2021 11:00 (20 minutes)

We investigate the structure of the Higgs potential in gauge-Higgs unification with a flat extra dimension. As a viable gauge-Higgs unification model, we take the one where the Standard Model Higgs doublet is embedded into a higher-dimensional SU(3)w gauge multiplet and relax five-dimensional Lorentz symmetry. In this model, the deviation in the triple Higgs boson coupling from its SM prediction is shown to be smaller than 10% for compactification scales larger than the experimental bound around 5 TeV. We also generalize about the analysis of the Higgs potential to other gauge-Higgs unification models with a flat extra dimension. It is shown that in this class of models the shape of the Higgs potential around the vacuum quickly approaches that of the minimal Higgs potential with one Higgs doublet as the compactification scale increases. An observable deviation in the triple Higgs boson coupling at the ILC will compel us to significantly extend such gauge-Higgs unification models. This is based on collaboration with Mr. Shin Suzuki published in Phys. Lett. B822, 136637 (2021).

1st preferred time slot for your oral presentation

10:00-12:00 JST (3:00-5:00 CEST, 21:00-23:00 EDT, 18:00-20:00 PDT)

2nd preferred time slot for your oral presentation

13:00-15:00 JST (6:00-8:00 CEST, 0:00-2:00 EDT, 21:00-23:00 PDT)

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Session Classification: F&H-1: Higgs properties & BSM particle production

Track Classification: Parallel sessions: Topical Groups: Session H: BSM particle production