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Type: **Talk**

First-order phase transitions and darkogenesis in Twin Higgs models

Thursday 25 April 2024 15:15 (15 minutes)

I will discuss phase transitions in Twin Higgs (TH) models. Previous studies found that phase transitions cannot be first-order. We show that strong first-order phase transitions (FOPTs) can occur provided that appropriate source of Z_2 symmetry breaking between the twin and Standard Model (SM) sectors is present. The strongest FOPTs are found in scenarios with large twin fermion Yukawa couplings and light twin sfermions in the framework of supersymmetric TH models. I will present predictions for gravitational waves. I will also discuss the EW symmetry non-restoration scenario in which the EW symmetry breaking occurs at temperatures much above the EW scale and implications for darkogenesis (baryogenesis from dark sector).

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