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Domain walls seeding the electroweak phase transition in the singlet-scalar extension of the SM

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Topological defects can act as local impurities that seed cosmological phase transitions. In this talk we will focus on how domain walls can affect the electroweak phase transition in the minimal singlet-scalar extension of the SM (xSM) with a Z_2 symmetry. When the transition is two-step, the early breaking of the Z_2 implies the formation of domain walls which subsequently act as seeds for the second step. The rate of the seeded phase transition can be evaluated within a 3d theory on the domain wall surface, and it is generically faster when compared to the standard homogeneous nucleation. We will comment on phenomenological implications for gravitational waves and baryogenesis.

Authors: MARIOTTI, Alberto (Vrije Universiteit Brussel); BLASI, Simone (Vrije Universiteit Brussel)

Presenter: BLASI, Simone (Vrije Universiteit Brussel)

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