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Domain walls as seeds for cosmological phase transitions

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Abstract: Cosmological phase transitions are interesting phenomena happening in the early Universe, having several phenomenological implications. In this talk I will discuss how the presence of topological defects in the early Universe can modify the mechanism under which the cosmological phase transitions occur, acting as impurities which catalyze the phase transition.
I will focus on the the case of domain walls and how they can affect the electroweak phase transition, employing as an illustrative example the minimal extension of the SM with a scalar singlet odd under a Z_2 symmetry. I will show how to compute the seeded tunneling rate with several techniques, what are the new properties of the seeded phase transitions, and the resulting implications for the gravitational wave spectrum.

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