

# Whispers from the Dark Universe - Particles & Fields in the Gravitational Wave Era

CLUSTER OF EXCELLENCE  
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DESY THEORY WORKSHOP

## WHISPERS FROM THE DARK UNIVERSE – PARTICLES & FIELDS IN THE GRAVITATIONAL WAVE ERA

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## EFT for supercooled phase transitions

*Thursday 26 September 2024 15:20 (16 minutes)*

“We analyze the role of higher-order thermal corrections for supercooled phase transition, and to what extent they can be computed using dimensionally reduced effective field theory (3D EFT). This framework requires high-temperature (HT) expansion to be valid, which seems challenging due to the presence of supercooling. We show how to reliably use the HT expansion in dimensionally reduced theory for the calculation of bubble nucleation rate, and apply it to a classically scale-invariant model. These corrections affect the predictions significantly e.g. transition temperature and scale. We compare new results to the ones obtained using the most common scheme based on the so-called daisy resummation.”

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