

NEW PERSPECTIVES IN  
CONFORMAL FIELD THEORY AND GRAVITY

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## Gravitational waves from Dark Phase Transitions at Strong Coupling

*Wednesday 27 September 2023 14:50 (20 minutes)*

In this talk, we demonstrate how to predict the gravitational wave spectra of Strongly coupled QFTs using holography and lattice data input for a pure  $SU(N)$  Yang-Mills theory with small uncertainties. We will elaborate on how we obtain an effective potential using holography with the free energy landscape approach and formulate an effective action. Once the effective action is in our grasp, we will use this to study bubble nucleation to predict the gravitational wave spectra. Furthermore, we will discuss how the bubble wall velocity computations can be made in steady-state configurations using holographic techniques by computations of the plasma friction force.

### Summary

First Order Phase Transitions at strong coupling, Primordial Gravitational waves,

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**Session Classification:** Parallel Session Wednesday: Gravitational waves/phase transitions session

**Track Classification:** Cosmology & Astroparticle Physics