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Cosmological phase transitions in the Holographic models for the composite Higgs boson

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The composite Higgs boson scenario assumes the existence of a new strongly coupled gauge sector with a softly broken approximate hyperflavor symmetry. At low energies the corresponding dynamics may be studied with help of the holographic techniques inspired by AdS/QCD. We present the bottom-up soft-wall holographic model that admits a first-order phase transition and, using a perturbation theory near the critical point, describe the production of the gravitational wave background by bubble nucleation processes in the thin-wall approximation. We also employ the approximation of the large number of spacetime dimensions to describe inhomogeneous black hole solutions dual to the gauge sector behavior in the bubble wall.

Paper info

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