



Contribution ID: 62

Type: **not specified**

Bubble wall friction in first order phase transitions with symmetry restoration

Wednesday 24 September 2025 15:12 (18 minutes)

We study friction effects on the expanding bubble wall in first order phase transitions (FOPT) with symmetry restoration, where particles become massless inside the bubble. We consider leading order (LO) and next-to leading order (NLO) friction effects of the surrounding plasma.

The inverse case, with symmetry breaking, is well studied and shows that LO friction effects decrease the bubble wall expansion but are not sufficient to stop runaway behavior. NLO effects however lead to velocity dependent friction terms which terminate the runaway of the bubble wall.

For the case of symmetry restoring FOPT we find an acceleration of the bubble wall at LO. At NLO we find again an acceleration of the bubble wall for low wall boost factors but also velocity dependent friction terms which decelerate the expansion and terminate the runaway at high wall boost factors. We compare both scenarios and see for which wall boost factors the NLO friction is of the same order for symmetry restoring and symmetry breaking transitions.

Primary authors: SHAKYA, Bibhushan (T (Cosmology)); ZIEGLER, Julia (UNI/TH (Uni Hamburg, Institut fuer Theoretische Physik))

Presenter: ZIEGLER, Julia (UNI/TH (Uni Hamburg, Institut fuer Theoretische Physik))

Session Classification: Parallel Sessions Wednesday Cosmo

Track Classification: Cosmology & Astroparticle Physics