Contribution ID : **18** Type : **not specified**

# Nonequilibrium Dynamics of Inhomogeneous Quantum Fields

*Tuesday, 26 June 2018 15:30 (30)*

The dynamics of inhomogeneous quantum fields out of equilibrium are especially relevant for the study of first-order phase transitions. It is our aim to calculate how bubble configurations of the new phase, that form in such a process, propagate and locally approach thermal equilibrium. The Electroweak phase transition in the early universe is of particular interest, since Baryogenesis can potentially explain the matter-antimatter asymmetry in the Universe for fitting dynamical properties of the phase transition and the bubble collisions result in gravitational waves that could be observed by the new generation of detectors.
To calculate the dynamics of quantum bubbles we have developed a program that solves the non-equilibrium equations of motion, the so called *Kadanoff-Baym Equations*. As a starting point we investigate the dynamics of bubbles in toy models.

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**Session Classification :** Parallel