

# Towards the precise calculation of acoustic gravitational waves sourced from first-order phase transitions — a new hydrodynamic-simulation-based framework

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Phase transition gravitational waves could be a novel probe for fundamental physics in the near future. Hence, precise calculation of phase transition gravitational waves is essential for detecting the sign of new physics. I will discuss a framework that could allow us to omit some unnecessary approximations and give a relatively more accurate calculation of gravitational waves generated by the sound wave mechanism. With some benchmark models, I will demonstrate the procedures of this framework and show the corresponding results.

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