

Lattice Boltzmann Method applications: a characterization of thermal effects in plasma waves

Wednesday, 20 September 2023 19:00 (1h 30m)

Lattice Boltzmann Method (LBM) is a novel numerical approach for simulating of Plasma WakeField Acceleration (PWFA) processes. In this talk, we employ the LBM to investigate the influence of temperature on plasma waves. Thermal effects can be relevant, for example, in PWFA processes with a high repetition rate, which holds significant importance for various PWFA applications. By utilizing LBM, we explore and characterize well-known thermal features of plasma waves documented in the literature, including acoustic motion, dispersion relations, and thermal anisotropies, providing quantitative assessments on the validity of the LBM for PWFA.

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