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Recent advances in plasma accelerator modelling and theory

Tuesday, 15 September 2015 11:00 (30 minutes)

Tremendous efforts have been made over the last few years to lay the foundation for theoretical modeling and to develop advanced simulation tools in plasma based accelerators. The massively parallel particle-in-cell simulations include sophisticated techniques as numerical noise reduction, Lorentz boosted frame, digital filtering, implementation of GPU architectures, etc. These advanced simulation techniques allowed accurate prediction of the mechanisms involved in the process of plasma-based electron or ion acceleration and are used to model experiments, to test new ideas and to optimise parameters in current or planned experiments.

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