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Modelling a plasma accelerator driven FEL

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This work provides an introduction to the physics of coherent radiation sources using free electron beams. It is a Free Electron Lasers (FEL), and makes a comparison with conventional laser sources. Along this work, we will define several fundamental points, such as the principles of plasma acceleration. In addition, we will explain the FEL principles; compare them to the conventional systems, in order to demonstrate why FEL can be considered as important sources of increasing number of applications owing to their wide range of tunability and high brightness.

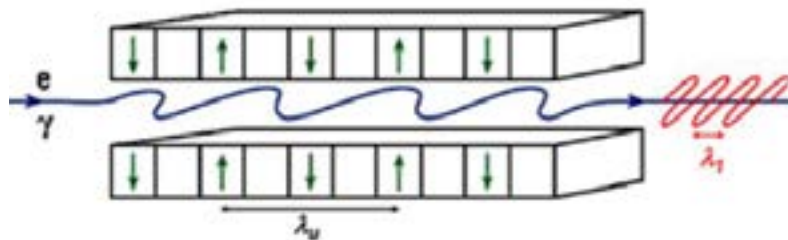


Fig. 1: Schematic of an FEL amplifier with the electron passing through planer undulator and emitting resonant undulator radiation.

Recent Publications

1. Badriah Alotaibi and Sherif Mohamed Khalil (2016) Linear and nonlinear electron beam heating of magnetized, motional, and dusty plasma. Journal of Modern Physics 7:1889–1900.

Biography

Badriah Mesfer Alotaibi is a PhD student from princess Nora Bint Abdurahman University her recent publication includes Linear and Nonlinear Electron Beam Heating of Magnetized, Motional, and Dusty Plasma Journal of Modern Physics, 7, 1889-1900.

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