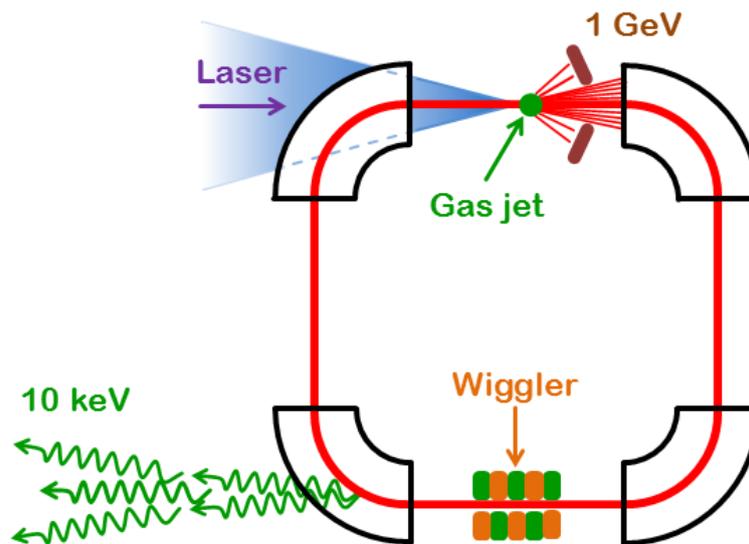


Mini-Project 3 - Compact ring-based X-ray source with laser plasma injection

Project description

In your working group, make a conceptual design of an X-ray source based on a compact storage ring of electron beam with top-on, on-orbit and on-energy injection by a laser plasma acceleration system. A sketch of the system is show below. (This is Mini-project 10.4 from “Unifying physics...”)



Select the necessary parameters of the system (e.g. beam energy of 1 GeV and targeted X-ray energy of 10 keV). Estimate brightness of the source and its other key parameters. Discuss the research steps required for implementing such a concept.

Describe why you selected particular values of certain parameters (for electron beam, laser, etc.).

Prepare a brief summary (can be hand-written, a few pages long) summary of your discussion.

Assign representative(s) from your Working Group for oral presentation of the summary.

Make ~30min presentation of the summary of your discussion.

Submit the written summary of your discussion.

Expected duration of the project work: 6 hrs

Extra credit activity – make a draft outline of NA-PAC-2016 report, write and submit abstract: 3 hrs