

External-Injection experiment at the SPARC_LAB facility

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At the SPARC_LAB facility of INFN-LNF we are installing two transport lines for ultra-short electron bunches and an ultra-intense laser pulse, generated by the SPARC photo-injector and by the FLAME laser in a synchronized fashion at the tens of fs level, to co-propagate inside many different gas filled devices. The main aim of this experiment is to demonstrate that a conventionally produced high brightness electron beam can be accelerated by a plasma wave without a significant degradation of its quality. We will show the status of the installations and overview the expected outcomes of plasma acceleration with respect to the different acceleration methodologies we foresee to implement.

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