The simulation laser wakefield acceleration on SQUID

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- **Purpose** The purpose of this research is to optimize the electron beam quality and reproducibility in the laser wakefield acceleration.
- **Outline** In the shock injection mechanism of LWFA, the position and the size of the electron injection domain are determined by the shock downramp. To make the accelerated beam controllable and tunable, the relation between the injected beam quality and the shock downramp is investigated by kinetic simulations via the Particle-in-cell (PIC) code.
- Result The kinetic simulations show the sensibility of the target profile to the electron acceleration and the computational fluid dynamics prove the effect of the stabilizer to the gas formation.

Computing system: node-hour memory used parallelize

SQUID General Purpose CPU nodes 140,230 node-hour 100 GB 6 nodes



transition obtained in the simulation.