

Design of a multistage laser wakefield accelerator



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- **Inputs:** Laser and plasma parameters
- **Outputs:** final beam quality (energy, energy spread, charge, ... combinations of these parameters ...)
- **Samples:** PIC simulations, fluid simulations, ... (need to produce these data)
- **Methods:** black-box function (multiobjective? Multifidelity?) optimization + High performance computing simulations



Plasma stage #1



Plasma stage #2



Laser pulse #1

Laser pulse #2

Electron
beam



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