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## Short Wavelength Drivers of Laser Plasma Acceleration and Strong Field QED

Scaling laws for laser-plasma interactions can be expressed in various ways. One approach is to apply a transformation that leaves the governing equations invariant and ask how the overall system is modified, and treat technological limitations as a set of constraints. This talk will examine such transformations with particular attention to reductions in laser wavelength, with a view toward developing petawatt class excimer lasers. A petawatt argon fluoride laser facility, operating at a central wavelength of 193 nm, and based notionally on the Electra amplifier at the Naval Research Laboratory, will be sketched. Advantages of this short wavelength for both laser plasma acceleration and strong field QED will be discussed, based on scaling arguments, and particle-in-cell simulations.

### Working group

WG1 : Laser-driven plasma wakefield acceleration

**Primary authors:** Dr HAFIZI, Bahman (Naval Research Laboratory); GORDON, Daniel (Naval Research Laboratory); Dr YOUNIS, Daniel (Huntington-Ingalls); Dr WOLFORD, Matthew (Naval Research Laboratory)

**Presenter:** GORDON, Daniel (Naval Research Laboratory)

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