

Near term studies of SF QED can be conducted at existing and next generation high-power laser facilities

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Near term goals:

Theory and simulation development should be accompanied by **ultra-high intensity laser experiments** relevant to high energy physics studies of **final focus and interaction point design** at existing and next generation laser facilities.

Theory and simulation developments in the non-perturbative regime.

Studies will need to go beyond:

- (i) simple approximations of the geometry of strong fields
- (ii) limited 'locally constant field' approximations used in numerical simulations
- (iii) the external field approximation itself

Near term applications:

Multiple-Beam laser facility can efficiently produce multi-GeV photon beam with high brilliance and high average flux

