## 5. Annual MT Meeting



Contribution ID: 115

Type: Poster + Speed talk

## Unexpected impact of radiation reaction on laser wake field generation

Tuesday 5 March 2019 17:00 (3 minutes)

Radiation reaction effect is expected to effectively modify

the plasma dynamics at ultra-intense laser intensities (intensity

 $I\simeq 10^{23}\text{--}10^{24}\,\text{W/cm}^2\text{)}.$  We show that enhancement of radiation pressure

due to radiation reaction acting in the direction transverse to the laser pulse propagation. This effect is especially pronounced for stronger and longer laser pulses transversing plasma slab of sub-critical density. Under such conditions this mechanism dominates over the ordinary ponderomotive pressure, thus resulting in a substantially

stronger charge separation than anticipated previously. We give estimates of the effect and compare them with the results of one and two dimensional particle-in-cell simulations. This effect can be important for laser-based plasma wake acceleration schemes.

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Track Classification: ARD