Contribution ID: **8** Type: **Poster**

Effects of non-zero plasma temperature

Most theoretical and simulation studies on plasma accelerators are performed with the assumption of cold plasma. However, with recent development in high-rep-rate acceleration in plasma, heat deposition from high-power, high-frequency beams can easily increase the ambient plasma temperature. Plasma electrons, given an initial momentum, have a locally "smeared out" distribution compared to the cold plasma case when perturbed. This change in plasma electron distribution in turn modifies the interaction between plasma electrons and the drive/accelerated beams. Several effects of finite plasma temperature on both the drive and the accelerated beam are observed. In particular, effects on beam emittance and transverse instabilities are discussed in this contribution.

Primary author: CAO, Gevy J.

Presenter: CAO, Gevy J.

Session Classification: Poster