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Signature of collective effects of pair plasmas¹ KENAN QU, SEBASTIAN MEUREN, NATHANIEL FISCH, Princeton University — Existing technology has enabled creating electron-positron pair plasma at high densities using, e.g. electron beam interaction with the field of heavy atoms [1]. The promise of new physics emerging in dense pair plasmas challenges the community to find a means to verify experimentally pair plasma behavior. This talk suggests a possibility to observe the collective effects of the pair plasma by studying pair dynamics induced by the electromagnetic wave field when and after they are created. The plasma frequency could be experimentally deduced so as to inform unambiguously on the pair density. 1. G. Sarri, et. al., Nature Communications (6), 6747 (2015).

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