

Abstract Submitted  
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**Enhanced ion particle flux and momentum outward of a plasma ball**<sup>1</sup> GENNADY MAKRINICH, AMNON FRUCHTMAN, H.I.T. - Holon Institute of Technology — A plasma ball has been produced near the anode in a configuration that, when magnetized, operates as a radial plasma source (RPS) [1]. Plasma balls have been studied recently in different configurations [2]. We find that the plasma particle flux outward of the plasma ball is larger than that expected by the Langmuir relation in double layers [3]. The frequency of oscillations of a pendulum is larger than due to gravity only, reflecting the force by the plasma ball. The force by the plasma ball is larger than expected by the model [3]. We address these two questions: the increased ion flux and the increased force relative to the model [3]. We suggest that the Langmuir relation underestimates the ratio of ion to electron flux. We also suggest that the ions gain most of the momentum in the quasi-neutral plasma rather than in the double layer; the impulse enhancement is suggested to result from ion-neutral collisions in the plasma.

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