Abstract Submitted
for the GEC18 Meeting of
The American Physical Society

Osmotic pressure on cell membranes in a saline interacting with weakly ionized plasma[1] MIKHAIL SHNEIDER, Princeton University, Princeton NJ 08544, MIKHAIL PEKKER, The George Washington University, Northwest Washington, DC 20052 — In this talk attention is drawn to the importance of accounting for osmotic pressure when analyzing physiological effects on cellular structures in plasma medicine. The selective effect of a plasma jet on living cells in a physiological solution can be related to a change in the osmotic pressure difference across the cell membrane, as a result of the injection of additional long-lived solvated (hydrated) ions by the plasma. This, in turn, leads to a stretching or compression of the membrane, depending on the difference of total external and internal pressures. The selective effect of plasma on cells, observed in experiments, may be associated with the change in the mechanical properties of membranes (and thereby, a weakening of their protective properties). Corresponding estimates are given. Our work does not claim to have found the only reason, why weakly ionized non-equilibrium plasma leads to cell death, but has identified a potential further physical mechanism that has relevance in plasma induced biological effects.. 1. M. N. Shneider, M. Pekker, J. Appl. Phys. 123, 204701 (2018)

[1]This work was supported by National Science Foundation (grant 1465061).

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Date submitted: 31 May 2018 Electronic form version 1.4