

Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

Surfatron Acceleration of Charged Particles in the Presence of Electromagnetic Fluctuations DMITRI VAINCHTEIN, Temple University, AFRICA RUIZ MORA, University of Rochester — In the present talk we discuss the properties of the surfatron acceleration of charged particles in the presence of random high-frequency fluctuations of the background magnetic field. We show that fluctuations significantly affect both capture into resonance, by forcing particles to escape from the surfatron resonance and thus altering the resulting energy spectrum of particles. Using the Probability distribution function approach, we compute the final energy distribution of particles as a function of the strength of the background magnetic field, the properties of the wave and the statistical properties of the fluctuations.

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Date submitted: 23 Jul 2015

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