

Abstract Submitted
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Spatial Plasma Oscillations - Physical Phenomenon or Computational Artefact? RAOUL FRANKLIN, The Open University, UK — Often when attempting to solve problems involving a bounded active plasma, the expedient is adopted of assuming plausible initial values and then integrating the full fluid equations including generation, collisions, and Poisson's equation, until the wall conditions are met. This procedure generates spatial plasma oscillations of decreasing magnitude. This paper examines a number of different cases and ranges over a wide variation of parameters. It seeks to show that such spatial oscillations arise from the approximations made. The oscillations have been the subject of interest in published papers from time to time, and thus we seek to make workers aware of these 'spurious' results in electropositive plasmas. On the other hand we also give results for electronegative plasmas where it is well-established that such oscillations are expected to occur in the vicinity of the core-plasma interface. However there is as yet, so far as I am aware, no experimental evidence for their existence.

Raoul Franklin
The Open University, UK

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