

Jenas instability of a dusty plasma with neutral grains: Theoretical approach

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A theoretical study is made on the Jeans instability of a dusty plasma consisting of both charged and neutral dust grains. The interplay of the electrostatic and the gravitational force is studied. The role of the frictional coupling between the charged and neutral components of the dust grains is also taken into consideration. It can be shown that a partially charged dust mass may lead to Jeans instability. The results are compared with relevant physical parameters.

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