Dust grains in mean motion orbital resonances with planet

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The evolution of interplanetary dust particles in the Solar System is mainly governed by the gravitational force of the Sun and planets. Non-gravitational effects become more significant with decreasing size of dust grains. The effects are more important on long-time scales. We consider the action of the solar corpuscular radiation in the form of the solar wind, the solar electromagnetic radiation in the form of the Poynting-Robertson (P-R) effect and the gravitational attraction of the Sun and planets. We focus on the dissipative restricted three body problem and mean motion orbital resonances of dust particles with planets. We also investigate the stability of the equilibrium solution in the restricted three body problem considering non-gravitational forces.

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