LASER PROPULSION OF NANOSAT TO LOW EARTH ORBIT

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Abstract

One of the major limitations of any spacecraft is their weight, which determines the amount of fuel they will have to carry for their journey. It also severely limits the speed achievable by them. Considering the vast expanse of space, the time required to travel those distances, prohibits travel, research and development. Laser propulsion is one of the engine-less ideas of propulsion. By eliminating the need for engine or fuel to be carried aboard, it massively decreases the weight of traditional propulsion systems thereby increasing achievable velocities. This project aims to study the dynamics of a laser propelled spacecraft thereby identifying its control parameters. A simulation environment will be used to do a parameterized study of laser propelled spacecraft and then synthesize guidance and control equations for the system.