

**LINEAR STABILITY OF TRIANGULAR EQUILIBRIUM
POINTS IN THE GENERALIZED
PHOTOGRAVITATIONAL RESTRICTED THREE BODY
PROBLEM WITH POYNTING-ROBERTSON DRAG**

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ABSTRACT. In this paper we have examined the linear stability of triangular equilibrium points in the generalised photogravitational restricted three body problem with Poynting-Robertson drag. We have found the position of triangular equilibrium points of our problem. The problem is generalised in the sense that smaller primary is supposed to be an oblate spheroid. The bigger primary is considered as radiating. The equations of motion are affected by radiation pressure force, oblateness and P-R drag. All classical results involving photogravitational and oblateness in restricted three body problem may be verified from this result. With the help of characteristic equation, we discussed the stability. Finally we conclude that triangular equilibrium points are unstable.

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1. INTRODUCTION

We study the motion of three finite bodies in the three body problem. The problem is restricted in the sense that one of the three masses is taken to be so small that the gravitational effect on the other masses by third mass is negligible. The smaller body is known as infinitesimal mass and remaining two massive bodies as finite masses. The classical restricted three body problem is generalised to include the force of radiation pressure, the