

## CHAOTIC MOTION OF AN ELASTIC SPACE TETHER SYSTEM

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The paper deals with the motion of an elastic tether system about the centre of mass. Tether systems consisting of two bodies and a weightless elastic tether are in a deployed position. The system's centre of mass moves along an elliptical trajectory. Equations of motion of an elastic tether system are constructed with the help of the Lagrangian equation of the second kind, the angle of true anomaly is chosen as an independent variable. A specific case of the system's motion is discussed, with the tether length remaining constant. It is shown that the system is subject to chaos in this case.

*Tether system, elastic vibrations, Lagrangian equations, chaos, Poincare representations, elliptical orbit.*

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