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THIRD ORDER EQUATIONS OF MOTIONS AND THE OSTRAGADSKY INSTABILITY

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Abstract

Nature prefers to describe the laws of physics by the second-order differential equations. Why the laws of physics are like this is a fundamental question of physics. It is known that any nondegenerate Lagrangian containing time derivative terms higher than first order suffers from the Ostragadsky instability. In this talk we will show that within the framework of analytical mechanics of point particles, any Lagrangian for third order equations of motion, which evades the nondegeneracy condition, still leads to the Ostragadsky instability.

Date : Friday, September 25, 2020

Time: 15:30

Place: IMBM Seminar Room, Boğaziçi University South Campus