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THE OSTROGRADSKY THEOREM: HIGHER-DERIVATIVES LAGRANGIANS, GHOSTS AND DEGENERACY

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Abstract

In this talk, we will review the Ostrogradsky ghost in higher-order theories. By higher-order we mean the theories with a Lagrangian that contain second-order or more derivatives. The investigation of the Ostrogradsky theorem is important to realize the nature of instabilities in these higher-order theories. First, we will recall the original Ostrogradsky theorem with a classical example, and show that the Hamiltonian appears unbounded. Then we will generalize our argument to a generalized Lagrangian and show that how degeneracy can be used to eliminate the instability of the system.

Date : Friday, September 18, 2020

Time: 15:30

Place: IMBM Seminar Room, Boğaziçi University South Campus