On Infinitely many Homoclinics for Singular Second-order Hamiltonian Systems

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In this talk we show existence of infinitely many homoclinic orbits for a class of singular second-order time-dependent Hamiltonian systems

$$\ddot{u} + V_u(t, u) = 0 \, , \quad -\infty < t < \infty \, .$$

We use variational methods under the assumption that $V(t, u)$ satisfies the so-called "Strong Force" condition. In the time-independent (i.e. conservative) situation, we give an independent proof of an earlier result of Tanaka on existence of one homoclinic orbit. This is joint work with Hossein Tehrani.