

# Departmental Colloquium

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1:00P.M., HH-3017

*Solitary waves of singularly perturbed higher-order KdV equation via geometric singular perturbation method*

## **Abstract:**

In this talk, we are concerned with a singularly perturbed higher-order KdV equation which is considered as a paradigm in nonlinear science and has many applications in weakly nonlinear and weakly dispersive physical systems. Based on the relation between solitary wave solution and homoclinic orbits of the associated ordinary differential equations, the persistence of the solitary wave solution for the singularly perturbed KdV equation is investigated by using the geometric singular perturbation theory and dynamical systems approach when the perturbation parameter is suitably small.