2014 CSE Special Lecture

8th August, 16:00

Room 516 ASTC. Yonsei Univ.

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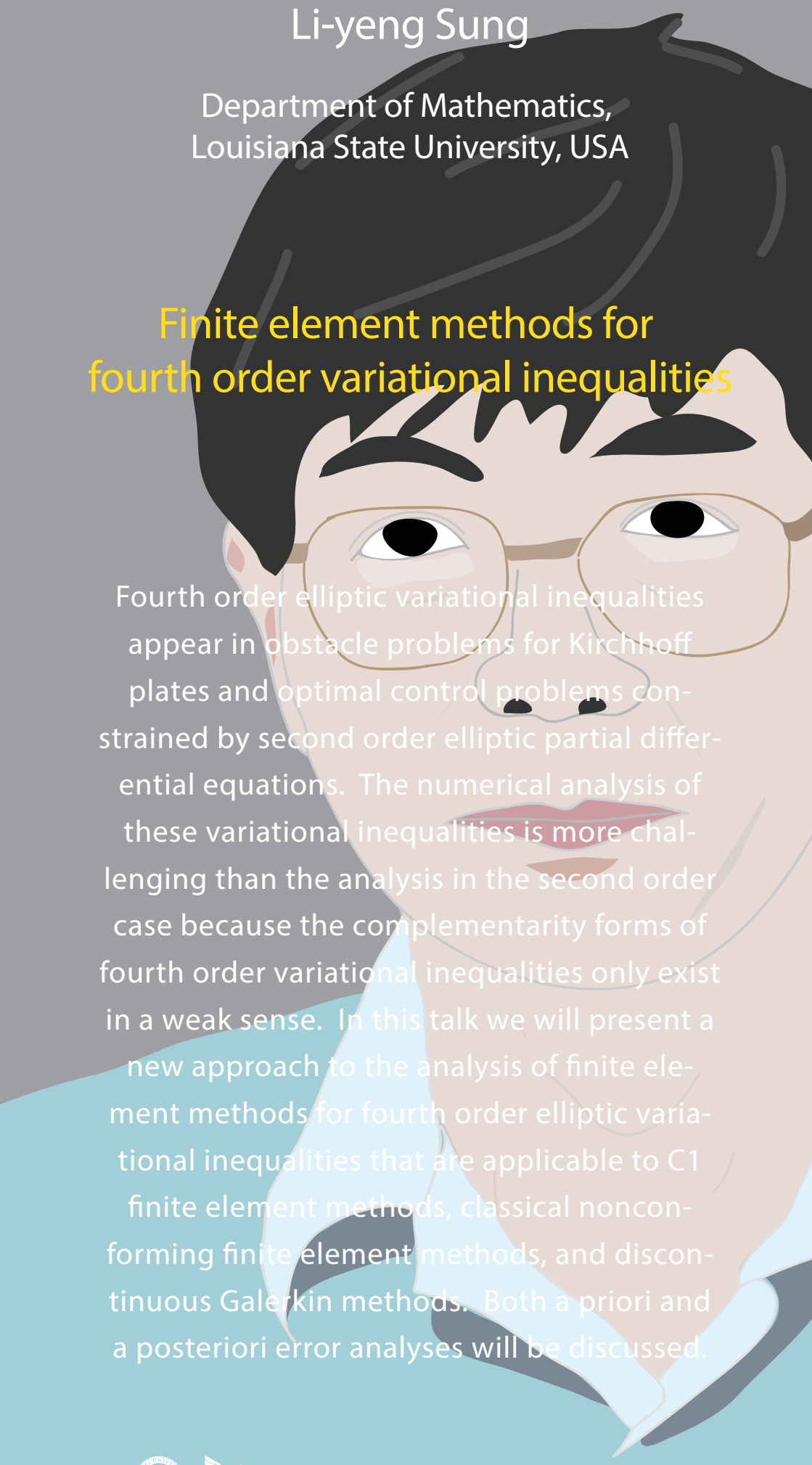
Finite element methods for fourth order variational inequalities



Fourth order elliptic variational inequalities appear in obstacle problems for Kirchhoff plates and optimal control problems constrained by second order elliptic partial differential equations. The numerical analysis of these variational inequalities is more challenging than the analysis in the second order case because the complementarity forms of fourth order variational inequalities only exist in a weak sense. In this talk we will present a new approach to the analysis of finite element methods for fourth order elliptic variational inequalities that are applicable to C1 finite element methods, classical nonconforming finite element methods, and discontinuous Galerkin methods. Both a priori and a posteriori error analyses will be discussed.

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