

**SPEAKER:**

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**TITLE:**

Laplace Equation in Convex Domains

**ABSTRACT:**

In this talk, we explore a strategy to obtain A priori estimates for the Laplace Equation with Dirichlet boundary conditions in a general convex domain through an approximation by smooth convex domains. While smooth domains have well known existence and A priori estimates in  $H^2$ , obtaining such results for a general convex domain requires alterations to these calculations. Utilizing the second fundamental quadratic form allows us to uniformly bound the sequence in  $H^2$  and transfer the estimate in smooth convex domains to general convex domains. This talk is based on 'Elliptic Problems in Nonsmooth Domains' by P. Grisvard.