



Differential Equations and Applied Math Seminar

Dr. Ray Treinen, Texas State University

11am-12pm April 13th, 2018

326 Derrick Hall

Title: Free discontinuity problems with applications to fracture mechanics, part 2

Abstract: We continue with our treatment of fracture models and image reconstruction models in the framework of minimizing an energy functional. We will prove a theorem on the coerciveness and lower semicontinuity of energies on $P-W^{1,p}(a, b)$ of the form

$$F(u) = \int_{(a,b)} f(u') dt + \sum_{S(u)} \vartheta(u^+ - u^-),$$

where $S(u)$ is the set of discontinuities, or fractures, of u . We will then apply this result to problems in Fracture Mechanics. We will close with a discussion of approximation of free-discontinuity problems, which we will complete next week.

We are mostly following the book by Andrea Braides.

Interested faculty and graduate students are encouraged to attend.