



Differential Equations and Applied Math Seminar

Dr. Ray Treinen, Texas State University

11am-12pm October 27th, 2017

333 Derrick Hall

Title: Γ -convergence topics VII

Abstract: We will continue our discussion of the gradient theory of phase transitions. We will prove an equi-coerciveness lemma that states that if the functional is given by

$$F_{\epsilon_j}(u_j) = \int_a^b (\epsilon_j^{-1}W(u) + \epsilon_j|u'|^2) dt,$$

where $W(u)$ is a double well function, then with some considerations there exists a subsequence of (u_j) converging in $L^1(a, b)$ to some piecewise constant function u . The limiting function u only takes on values so that $W(u) = 0$. This can be interpreted as the densities collecting into distinct phases in the limit.

We are mostly following the book by Andrea Braides.

Interested faculty and graduate students are encouraged to attend.