SCOTT RODNEY, Cape Breton University
Iterations in PDEs

In this talk I will discuss some recent progress on joint work with D. Cruz-Uribe (University of Alabama) and S.F. MacDonald (CBU) concerning the boundedness of weak solutions to equations of the form

$$-\mathrm{Div}\,(Q(x)\nabla u(x)) = f(x)$$

in a bounded domain Ω of $\mathbb{R}^n$ with $n \geq 4$ and where $Q(x)$ is a symmetric non-negative definite matrix valued function on Ω. Using a De Giorgi iterative process we produce boundedness results for weak solutions u when the data function f belongs to an Orlicz class $L^{\Psi}(\Omega)$ where Ψ is a particular type of Young function satisfying $\Psi(t) > t^{n/2}$.