"The Asymptotic Behavior of Solutions of Quasilinear Elliptic Equations in Slabs"

Abstract:

The asymptotic behavior of solutions of second-order quasilinear elliptic partial differential equations defined on unbounded domains in $\mathbb{R}^n$ contained in strips (when $n=2$) or slabs (when $n>2$) is investigated when such solutions satisfy Dirichlet boundary conditions and the Dirichlet boundary data has appropriate asymptotic behavior at infinity. We prove Phragmén-Lindelöf theorems for large classes of elliptic operators, including uniformly elliptic operators and operators with well defined (in genre), establish exponential decay estimates for uniformly elliptic operators when the Dirichlet boundary data vanishes outside a compact set, establish the uniqueness of solutions, and give examples of solutions for non-uniformly elliptic operators which decay but do not decay exponentially. Our principle theorems are proven using special barrier functions; these barriers are constructed by considering an operator associated to our original operator.

Friday, March 6, 1998
3:00 PM in 335 Jabara Hall

Please come welcome our guest and join us for refreshments before the lecture at 2:30 p.m. in room 353 Jabara Hall.