[POSTER]

University of Florida
Mathematics Department
THIRD CENTER FOR APPLIED MATH COLLOQUIUM

by

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on

A Phragmén-Lindelöf Principle in Harmonic Analysis

Date:	Tuesday, March 7 (2006)
Time:	4:00 - 4:55pm
Room:	CSE E119
Refreshments:	After the lecture in the Atrium (LIT 339)

OPENING REMARKS
by
Dr. Win Phillips
Vice-President for Research

Abstract. Let S be a linear space of vector valued functions $u(y)$ on the half-line $y > 0$ whose values belong to some Banach space. We suppose that S is translation-invariant; that is, that if $u(y)$ belongs to S, so does $u(y+t)$ for all $t > 0$. S is called *interior compact* if the unit ball of S in the L^1-norm over a y-interval $[a,b]$ is precompact in the L^1-norm over any proper subinterval $[a',b']$.

Theorem: Any function $u(y)$ in a translation-invariant, interior-compact space that is L^1 on $y > 0$ decays exponentially as y tends to infinity, and has an asymptotic expansion near infinity in terms of exponential functions in y contained in S.

This result can be applied to solutions of elliptic equations in a half cylinder.

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* Peter Lax is one of the world's leading authorities in the field of partial differential equations and applications. In the 1950s and 1960s he laid the foundations of the modern theory of hyperbolic systems. He has made ground breaking contributions to solitons, entropy, and shock waves. His name is associated with many major mathematical results - the Lax-Milgram theorem, the Lax-Friedrichs Scheme, the Lax entropy condition, to name a few. For his outstanding research contributions spanning half a century, he was awarded the Abel Prize in 2005. (The Abel Prize, for mathematics created in 2003 by the Abel Foundation of Norway, matches the Nobel Prize in prestige and prize money). His other recognitions include the Norbert Wiener Prize of the American Mathematical Society and the Society of Industrial and Applied Mathematics in 1975, the Wolf Prize of Israel in 1987, and The National Medal of Science in 1986. The Courant Institute of the New York University has been his academic home where he received his PhD in 1950, has been on its faculty since 1951, and served as its Director during 1972-80.

This years CAM Colloquium is a featured lecture in our Special Year in Probability and Analysis.

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