

WICHITA STATE UNIVERSITY
Department of Mathematics and Statistics

*The Lecture Series in the
Mathematical Sciences Presents Our Guest:*

Prof. Phil Parker
Wichita State University

*“Conjugate Loci of pseudoRiemannian 2-step Nilpotent
Lie Groups with Nondegenerate Center”*

Abstract:

This talk reports some of the joint work with C. Jang done here last year. The talk will begin with a bit of history of the problem and includes some pictures of 3-dimensional conjugate loci.

We determined the conjugate locus (with multiplicities) along all geodesics parallel or perpendicular to the center. When the center is 1-dimensional we obtained formulas in all cases, and when a certain operator is also diagonalizable these formulas become completely explicit. These results yielded some new information about the smoothness of the pseudo Riemannian conjugate locus.

For a well-known subclass of 2-step groups, we made a complete determination of the entire conjugate locus (including multiplicities). This class includes (generalized) Heisenberg groups, which one notes also have 1-dimensional centers and for which the operator mentioned above is diagonalizable.

Friday, November 7, 2003
3:00 PM in 372 Jabara Hall

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