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THE FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES

GEOMETRIC MECHANICS SEMINARS

SPEAKER:

RICHARD ATKINS
The Fields Institute

On the Topic:

"When is a Connection on a Surface A Metric Connection?"

In this talk we consider an inverse problem in the calculus of variations, namely, when a connection on a surface is a (psuedo-Riemannian) metric connection. This problem has a known local solution, and also a known global solution in the case when the connection is generated by a positive definite inner product, based on constructing a volume form. We survey these known results and then give a global characterization of connections on a surface that are determined by any non-degenerate metric (i.e. Riemannian or Lorenzian). Futhermore we give a new local description of such connections in terms of the eigenspaces of the curvature tensor.

Tuesday, April 20, 1993

3:30 pm, room 3018,

at

The Fields Institute

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