Meeting: 1006, Lubbock, Texas, SS 3A, Special Session on Classical and Differential Galois Theory

1006-12-103 **Jerald J. Kovacic*** (jkovacic@member.ams.org), 29 E 10 St, 2nd Floor, New York, NY 10003.

Strongly normal extensions.

The differential Galois theory of strongly normal extensions is ripe for study. It has been neglected, possibly because Kolchin used his own axiomatic definition of algebraic group. Instead, we use differential schemes, another area ripe for study. Strongly normal extensions are abundant; every connected group scheme is the Galois group of some strongly normal extension. And there is a "factory" to produce them - the logarithmic derivative. Yet explicit examples are difficult to find, the easiest being Jacobians of hyperelliptic curves. In contrast to the Picard-Vessiot theory, one cannot start with an arbitrary differential equation and hope to construct a strongly normal extension. There has been some work on characterizing the type of equation needed, but much more is needed. (Received February 09, 2005)