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Christine E Offerman* (ceofferan@gmail.com). *Multi-temporal Wave Equations on Riemannian Symmetric Spaces.*

In 1976, Semenov-Tjan-Shansky introduced a formulation of the classical Cauchy problem for Riemannian symmetric spaces. In this case, the partial differential equation becomes a system of equations involving invariant differential operators on the symmetric space and multiple ‘time’ variables along with initial conditions involving the Weyl group harmonic polynomials. In 1999, Helgason studied this multi-temporal system on noncompact symmetric spaces using Fourier analysis. I will discuss recent results, obtained in collaboration with F. Gonzalez, for the cases of flat and compact symmetric spaces. I will begin by giving solution forms for the system involving the Fourier and Radon transforms. I will then talk about some properties of these solutions and the issue of uniqueness. In addition, I will present an energy form for this system as well as some of its properties, including its relation to the Fourier transform and a Plancherel-type result. (Received February 09, 2014)