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University of Maine, Orono, ME 04469. *Transplantation formulas for spherical  
functions*. Preliminary report.

Let  $X = G/K$  be a rank one symmetric space of non-compact type. A key object of study in harmonic analysis is the spherical function: the unique  $K$ -invariant solution to  $\Delta u = -(\lambda^2 + \rho^2)u$ , where  $\Delta$  is the Laplacian on  $X$  and  $\rho = (\dim(X) - 1)/2$ . When  $X$  is an odd dimensional real hyperbolic space, the spherical function is an elementary function and as consequence, local questions in harmonic analysis can be reduced to one dimensional Fourier integral arguments. In this talk a partial Radon transform is used to intertwine the Laplacian on  $X$  and that on a certain odd dimensional real hyperbolic space. Consequently, we derive integral formulas relating the spherical functions on these spaces which provide geometric insight into formulas derived by analytic methods in the paper Bray and Pinsky (Jour. Func. Anal. 30 (1997)). The results presented extend the authors results on Euclidean space (to appear, Proc. Edin. Math. Soc.) (Received September 01, 2006)