962-42-941   **William O. Bray*** (`bray@germain.umemat.maine.edu`), Departmemt of Mathematics & Statistics, University of Maine, 333 Neville Hall, Orono, ME 04468-5752. *Geometric Transplantation in Harmonic Analysis and its Application.*

In joint work with Pinsky (JFA 151 (1997)) we obtained analytically formulas relating the spherical functions on even dimensional rank one symmetric spaces to those of a certain odd dimensional real hyperbolic space. For example,

$$\phi_\lambda^{2m}(a_t)\,|c_{2m}(\lambda)|^{-2} = |c_{2m+1}(\lambda)|^{-2}\int\limits_t^\infty \phi_\lambda^{2m+1}(a_s)\,A(t,s)\,ds,$$

where ϕ_λ is the spherical function (superscript relates to dimension), $c(\lambda)$ is the Harish-Chandra c-function (subscript relates to dimension) and the kernel A(t,s) is an elementary function. The purpose of this talk is to understand such formulas via a geometric transform, relate the dual transform and develop applications in the simple settings of Euclidean space, real hyperbolic space, and local harmonic analysis on spheres.Time permitting, the geometric view for rank one symmetric spaces and examples in higher rank will be surveyed. (Received September 29, 2000)

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