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Gestur Olafsson* (olafsson@math.lsu.edu), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803, and **Henrik Schlichtkrull**. *The Segal-Bargmann transform for the heat equation associated with root systems and symmetric spaces.*

We discuss the heat equation associated to a multiplicity function on a root system, where the corresponding Laplace operator has been defined by Heckman and Opdam. In particular, we describe the image of the associated Segal-Bargmann transform as a space of holomorphic functions. In the case where the multiplicity function corresponds to a Riemannian symmetric space G/K of noncompact type, we obtain a description of the image of the space of K -invariant L^2 -function on G/K under the Segal-Bargmann transform associated to the heat equation on G/K . (Received February 12, 2006)