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William O. Bray* (bray@math.umaine.edu), Department of Mathematics and Statistics, 333 Neville Hall, University of Maine, Orono, ME 04469. *Partial Abel Transforms on Damek-Ricci spaces and their application*. Preliminary report.

Harmonic analysis and integral geometry on Damek-Ricci spaces, a.k.a. harmonic NA -groups, have been extensively studied in the past two decades and is a natural extension of the known theory for rank one symmetric spaces of non-compact type. In this talk we define partial Abel transforms which serve to intertwine the Laplace operator on two Damek-Ricci spaces. As consequence, integral formulas relating the spherical functions on the spaces is determined. Special cases of the latter lie in the work of Ricci (Rend.Sem.Mat.Univ.Pol (1992)) and the work of Bray and Pinsky (Jour.Func.Anal. (1997)). (Received July 24, 2010)