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Hideko Sekiguchi*, Graduate School of Mathematical Sciences, The University of Tokyo, 3-8-1 Komaba, Meguro, Tokyo 153-8914, Japan. *Penrose transforms between symmetric spaces*. Preliminary report.

We determine the image of the Penrose transform, from the Dolbeault cohomology group on the indefinite Grassmann manifold consisting of maximal positive k -planes to the space of holomorphic functions over the bounded symmetric domain. Furthermore, we generalize twistor transforms, and prove that there is a duality between Dolbeault cohomology groups on two indefinite Grassmann manifolds, namely, that of positive k -planes and that of negative k -planes. (Received September 22, 2011)