February 4: Adam Koranyi (CUNY), "LIOUVILLE-TYPE THEOREMS IN PARABOLIC GEOMETRY." FOLLOWED BY DINNER.

$G = O(n+1,1)$ acts on the n-sphere by conformal transformations. In 1850 Liouville proved that, for n at least 3, any smooth conformal map of an open subset of the sphere onto another one is the restriction of an element of G. In general, let G be a simple real Lie group and $P = MAN$ a parabolic subgroup. The action of G on G/P is "multicontact" in the sense that it preserves a natural filtering of the tangent bundle induced by the root structure. It is also "conformal" in the sense that, in addition, the differential of the action at any point belongs to MA. It will be shown that in many cases (e. g. whenever P is non-maximal) the analogue of Liouville's theorem holds for multicontact maps. In almost all cases it holds for "conformal" maps. The methods are Lie-theoretic but otherwise elementary. This is joint work with M. Cowling, F. De Mari and H. M. Reimann.