1077-22-1515   **Erik P. van den Ban*** (`E.P.vandenBan@uu.nl`), Department of Mathematics, Utrecht University, PO Box 80 010, 3518 TA Utrecht, Netherlands. *Cusp forms for semisimple symmetric spaces.* Preliminary report.

We report on joint work with Job Kuit and (partly) Henrik Schlichtkrull.

In Harish-Chandra's work on harmonic analysis for a general real semisimple Lie group G, the notion of cusp form plays a fundamental role. The space $\mathcal{C}_{\mathrm{cusp}}(G)$ of cusp forms is a subspace of the Schwartz space $\mathcal{C}(G)$, characterized by vanishing of suitable integral transforms. A famous result of Harish-Chandra asserts that $\mathcal{C}_{\mathrm{cusp}}(G)$ equals the discrete part $\mathcal{C}_d(G)$ of $\mathcal{C}(G)$.

In the past decades, the theory of harmonic analysis on a general semisimple symmetric space G/H has been developed to a large extent, resulting in a Plancherel theorem. However, a suitable notion of cusp form has not yet been developed. A few years ago, M. Flensted-Jensen proposed such a notion, which would generalize the notion for the group. In the present talk we will show that with a small adaptation, this idea works for spaces of split rank 1. The resulting space $\mathcal{C}_{\mathrm{cusp}}(G/H)$ is contained in $\mathcal{C}_{\mathrm{d}}(G/H)$ but need not be equal to the latter. (Received September 20, 2011)

1