

## Fourier analysis of Whittaker functions on a real reductive group

**Erik van den Ban**

The Whittaker Plancherel formula concerns the Plancherel decomposition of the induced representation  $\text{Ind}_{N_0}^G(\chi)$ , with  $G$  a real reductive Lie group,  $N_0$  the nilpotent radical of a minimal parabolic subgroup and  $\chi$  a (regular) unitary character of  $N_0$ .

The result was announced by Harish-Chandra in 1982, but the details of the proof remained unpublished for many years, because of his untimely death. In 2018, details appeared in the posthumous volume 5 of his collected works. An independent approach to the Whittaker Plancherel formula was suggested by N. Wallach, in the second volume of ‘Real Reductive Groups’, 1992.

Harish-Chandra’s result relies on density of a space of wave packets, which is provided by his ‘philosophy of cusp forms.’ In the talk we will explain how this density result can also be established by means of Paley-Wiener techniques and a new Fourier inversion theorem.