

# BOUNDS FOR EIGENFUNCTIONS ON LOCALLY SYMMETRIC SPACES IN THE LARGE EIGENVALUE LIMIT

SIMON MARSHALL

*Abstract:*

Let  $X$  be a locally symmetric space, and  $f$  a joint eigenfunction of the invariant differential operators on  $X$ . I will discuss the question of how much  $f$  can concentrate on small sets as its spectral parameter goes to infinity. This concentration will be measured in terms of the  $L^p$  norms of  $f$ , and its integrals and  $L^p$  norms along submanifolds. I will survey a range of results, proved using tools from both harmonic analysis and number theory.