
NAHID WALJI, University of British Columbia

On the decomposition of automorphic symmetric power L -functions for $GL(3)$ and $GL(4)$

We investigate the conjectural decomposition of symmetric power lifts of automorphic representations for $GL(3)$, via the study of the corresponding L -functions. We consider the asymptotic behaviour of exterior, symmetric power, and Rankin–Selberg L -functions, and show that under various assumptions about automorphy and cuspidality, we can bound the maximum number of isobaric summands for the k th symmetric power lift. In particular, we show it is bounded above by 3 for $k \geq 7$, and bounded above by 2 when $k \geq 19$ with k congruent to 1 (mod 3). We will also discuss the analogous problem for $GL(4)$.