Decomposition of Splitting Invariants in Split Real Groups

Tasho Kaletha

Abstract. For a maximal torus in a quasi-split semi-simple simply-connected group over a local field of characteristic 0, Langlands and Shelstad constructed a cohomological invariant called the splitting invariant, which is an important component of their endoscopic transfer factors. We study this invariant in the case of a split real group and prove a decomposition theorem which expresses this invariant for a general torus as a product of the corresponding invariants for simple tori. We also show how this reduction formula allows for the comparison of splitting invariants between different tori in the given real group.