

# Invariant linear functionals and degenerate Whittaker models

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## Abstract

Consider the dual pair  $(O(p, q), Sp(n, \mathbb{R}))$ . For a unitary lowest weight module  $\pi$  of  $\widetilde{Sp}(n, \mathbb{R})$ , let  $\Theta_{p,q}(\pi)$  be the maximal quotient associated to  $\pi$ , which is a representation of  $O(p, q)$ . Building on the work of Loke, Nishiyama and Zhu, and using a technique relating degenerate Whittaker models of a representation of  $\widetilde{Sp}(n, \mathbb{R})$  with certain linear functionals of its  $\Theta$ -lift, we relate the multiplicity in the associated cycle of  $\Theta_{p,q}(\pi)$  to its space of  $O(p-n, q)$ -invariant linear functionals. This is ongoing work with Chen-bo Zhu.