

INTEGRAL NON-VANISHING CRITERIA FOR POINCARÉ SERIES

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ABSTRACT: The question when a cusp form defined by a Poincaré series vanishes identically was recognized as interesting and complicated as early as 1882 by Poincaré. Most existing approaches to this problem are based on estimating Fourier coefficients of the cusp forms in question. We will discuss a different approach, based on Muić's integral non-vanishing criterion for Poincaré series on unimodular locally compact groups. In 2010, Muić used his criterion to study the non-vanishing of various cusp forms of integral weight. We present new applications to cusp forms of half-integral weight, cuspidal vector-valued modular forms and cuspidal Siegel modular forms.

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