1106-11-2748   **Cormac O'Sullivan** and **Karen Taylor*** (`karen.taylor@bcc.cuny.edu`). *Hyperbolic Fourier coefficients of Poincaré series.*

Hans Petersson (1941) gave a uniform treatment of parabolic, elliptic and hyperbolic Poincaré series as spanning sets for holomorphic cusp forms. In an earlier paper, Petersson, gave, the now classical, expansion of the (parabolic) Fourier coefficients of (parabolic) Poincaré series in terms of Bessel functions and Kloosterman sums. In this paper we give the hyperbolic Fourier coefficients of holomorphic parabolic and hyperbolic Poincaré series in terms of hypergeometric series and generalized Kloosterman sums. (Received September 16, 2014)