BEI ZHANG, Institute for Advanced Study

Nonvanishing $\mathrm{mod}\, p$ of Eisenstein series

Ribet's idea about the congruence argument between automorphic forms turns out to be useful in the proof towards one direction of Iwasawa main conjecture. In the proof, a p-integral Eisenstein series E needs to be constructed so that $E \not\equiv 0 \pmod{p}$. I will recall in several cases ($\mathrm{GSp}(4)$ by Urban and $U(2,1)$ by Mainardi), how this problem was solved, then explain the difficulty of obtaining such result for an Eisenstein series on $U(3,1)$. At last, I will show the result we have so far through the calculation of Fourier–Jacobi coefficient of this Eisenstein series.