1147-11-404 **Jesse K. Silliman*** (`jksilliman@gmail.com`). *Irrational Periods of Hilbert Eisenstein Series.*

We will show that the periods of the holomorphic Eisenstein series of level 1, parallel weight 2, on a Hilbert modular surface are not rational, even up to scaling. We will explain how this is analogous to the non-holomorphy of the Eisenstein series E_2 for $\mathrm{SL}_2(\mathbb{Z})$. Similar results hold for Hilbert modular varieties of all dimensions, and for extensions of Galois representations occuring in étale cohomology. For the étale results, the key point is to study the restriction of the canonical extension of the Hodge bundle to the boundary of a smooth toroidal compactification. (Received January 22, 2019)