1151-57-214 **Bena Tshishiku*** (`tshishikub@gmail.com`), 151 Thayer St, Providence, RI 02912. *Actions of mapping class groups on homology.*

The mapping class group $\mathrm{Mod}(X)$ of a surface X (virtually) acts on the homology of any finite cover $Y \to X$. This defines a homomorphism from (a finite-index subgroup of) $\mathrm{Mod}(X)$ to a symplectic group. The main result of this talk is that the image of this homomorphism is an arithmetic group for certain cyclic branched covers $Y \to X$. This builds on work of Looijenga, Venkataramana, and Grunewald-Larsen-Lubotzky-Malestein. As an application, we show that the Atiyah-Kodaira surface bundles fiber in exactly two ways. This is joint work with Nick Salter. (Received August 19, 2019)