1163-11-204　　　　　**Arseniy Sheydvasser*** (`sheydvasser@gmail.com`), 92 Mount Vickery Road, Southborough, MA 01772. *Twists on Quaternion Algebras and Related Orbifolds.*

The accidental isomorphism between $PSL(2,\mathbb{C})$ and the orientation-preserving isometry group of hyperbolic 3-space gives a way of relating number-theoretic information about imaginary quadratic fields to geometric information about hyperbolic 3-orbifolds. In this talk, we will discuss a similar accidental isomorphism between the orientation-preserving isometry group of hyperbolic 4-space and an algebraic group constructed from the quaternions together with a particular choice of involution. We will show that, very similarly, this will allow us to relate number-theoretic information about rational quaternion algebras to geometric information about hyperbolic 4-orbifolds. (Received August 26, 2020)