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Charlotte Chan* (charchan@mit.edu), MIT, Department of Mathematics, Simons Building (Building 2), Room 106, 77 Massachusetts Avenue, Cambridge, MA 02139. *A family of arithmetic automorphic forms on $GU(3)$.*

In the mid-19th century, Kummer proved that the existence of p -torsion of the class group of $\mathbb{Q}(\mu_p)$ is equivalent to the p -divisibility of certain Bernoulli numbers. Modern refinements and variations of this connection relate Selmer groups to special values of L -functions, and following an idea of Ribet from the 1970s, one can relate these two objects to congruences of automorphic forms. In this talk, we discuss a construction of an arithmetic automorphic form on $GU(3)$ and its (potential) applications to this picture. This is joint work in progress with Christopher Skinner. (Received January 14, 2020)