1137-11-169 **Luca Candelori*** (candelori@math.hawaii.edu). *Fields of definition for mock modular forms with CM shadow.*

Given a harmonic Maass form of integral weight, the coefficients of its holomorphic part are in general transcendental, even when the shadow is a cuspidal eigenform defined over a number field. However, when the shadow has complex multiplication (CM) Bruinier, Ono and Rhoades have shown that the coefficients of the holomorphic part lie in a number field. Based on numerical evidence, they further conjectured that this number field coincides with the field of definition of the shadow. In this talk we present a proof of this conjecture, based on the geometric interpretation of harmonic Maass forms. Indeed, the proof relies on somewhat deep results concerning motives of CM modular forms. We also discuss the still open (and harder) 'converse' conjecture on whether the CM shadow case is the only such case when the coefficients of the holomorphic part are algebraic, relating it to well-known conjectures in algebraic geometry and transcendence theory. This is joint work with Pavel Guerzhoy (University of Hawaii). (Received February 02, 2018)