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Fabrizio Andreatta (Università di Roma "La Sapienza") Hilbert modular forms mod p

ABSTRACT: In this talk I will present joint work with E. Goren (McGill) concerning the theory of Hilbert modular forms in characteristic p. I will describe the kernel and the image of the q-expansion map and prove the existence of filtration for Hilbert modular forms. I will define operators U, V and Θ_{χ} and study the variation of the filtration under these operators. In particular, I will prove that every ordinary eigenform has filtration in a prescribed box of weights. Our methods are geometric – comparing holomorphic Hilbert modular forms with rational functions on a moduli scheme with level-p structure, whose poles are supported on the non-ordinary locus.

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