

# Philadelphia Area Number Theory Seminar

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## On free resolutions of Iwasawa modules

**Abstract:** The topic of the talk is related to non-commutative Iwasawa theory and is motivated by certain (conjectural) integrality properties of the  $p$ -adic  $L$ -function. We will discuss certain non-primitive Iwasawa modules that have a free resolution of length one over the completed group ring  $Z_p[[H]]$ . Here,  $H$  is the Galois group of a finite Galois extension  $L=K$  of totally real fields and  $\Gamma$  is the Galois group of the cyclotomic extension  $K_1=K$ . If time permits, we will consider an application of this