

“K-theory/Quadratic Forms” seminar
Wednesday, April 5th

IWASAWA DESCENT AND CO-DESCENT FOR UNITS
MODULO CIRCULAR UNITS
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Abstract. This is a joint work with Thong Nguyen Quang Do (University of Besançon, France).

Let F be a totally real abelian number field, $F_\infty = \cup_{n \geq 0} F_n$ its cyclotomic \mathbb{Z}_p -extension ($p \neq 2$), $\Gamma_n = \text{Gal}(F_\infty/F_n)$. Let B_n be the p -part of the quotient U_n/C_n of the units of F_n modulo circular units. We study descent and co-descent for the Iwasawa modules $B_\infty = \varinjlim B_n$ and $Y_\infty = \varprojlim B_n$; more precisely, using the Main Conjecture, we determine the kernels and cokernels of the natural maps $B_n \rightarrow (B_\infty)^{\Gamma_n}$ and $(Y_\infty)_{\Gamma_n} \rightarrow B_n$ in terms of some (module theoretic) invariants attached to F_∞/F . We derive some consequences related to Greenberg’s conjecture.