Speaker : Francesc Bars
Title : *On cyclotomic Iwasawa theory for function fields*
Abstract : Let F be a global function field of characteristic p (for simplicity in the talk we will restrict to $F = \mathbb{F}_q(T)$). Let us consider $\mathcal{F}$ the "cyclotomic" extension given by the $\mathfrak{p}^n$-torsion of the Carlitz module, $\mathfrak{p}$ a prime ideal of F, we recall that $Gal(\mathcal{F}/F) \cong \mathbb{Z}_p^{\mathbb{N}} \times A$ where A is a finite group of order prime to p.

First, we will consider this "cyclotomic" extension over the local field $F_{\mathfrak{p}}$. Coleman power series are a useful tool to deal with norm compatible systems of units. In this "cyclotomic" setting they provide us different results: an analog of Wiles's reciprocity law and an efficient way to define the Coates-Wiles homomorphism; also, we can compute the image of this homomorphism for particular norm compatible systems of "cyclotomic" units.

Secondly, we will present various aspects of Iwasawa theory for characteristic ideals and the Pontrjagin dual of the Selmer group of an abelian variety A defined over F associated with a $\mathbb{Z}_p^{\mathbb{N}}$-extension, providing algebraic ingredients for the Main Conjecture.