**TITLE:** Microlocalization of Iwasawa algebras

**ABSTRACT:** Iwasawa algebras are the completed group rings of compact $p$-adic Lie groups. Such Lie groups arise in noncommutative Iwasawa theory as Galois groups of global field extensions. By work of Kato, Venjakob, and others, the Iwasawa theoretic concept of a characteristic power series needs the passage to a very specific localization of the Iwasawa algebra.

In the $p$-adic representation theory of $p$-adic reductive groups Iwasawa algebras appear disguised as distribution algebras. More surprisingly, recent developments in the search for a $p$-adic local Langlands program indicate that the $p$-adic completion of the very same localization (in the case of a unipotent group) will play an important role. It allows to set up a higher dimensional (and noncommutative) analog of Fontaine’s theory of $(\phi, \Gamma)$-modules.

In joint work with Venjakob we have constructed these completions explicitly as rings of skew Laurent series.