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 (ϕ, Γ)-modules.

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