P-ADIC MILNOR K-THEORY OF P-ADIC RINGS

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Joint with Morten Lüders. The Milnor K-theory of a local ring may initially appear to be an ad-hoc invariant, but turns out to be motivic in nature. In particular, Nesterenko and Suslin showed that the Milnor K-groups of a field were isomorphic to its motivic cohomology in the range where degree equals weight; by then proving the Beilinson—-Lichtenbaum conjectures, Voevodsky connected motivic cohomology to l-adic étale cohomology and so established the Bloch—Kato conjecture. We will present p-adic analogues of these results by describing the p-adic Milnor K-theory of p-complete local rings in terms of the syntomic cohomology introduced by Bhatt—M.—Scholze.