Algebra Seminar

Local-to-Global Extensions for Wildly Ramified Covers of Curves

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Abstract: Given a Galois cover of curves $X \to Y$ with Galois group G which is totally ramified at a point x and unramified elsewhere, restriction to the punctured formal neighborhood of x induces a Galois extension of Laurent series rings $k((u))/k((t))$. If we fix a base curve Y, we can ask when a Galois extension of Laurent series rings comes from a global cover of Y in this way. Harbater proved that over a separably closed field, every Laurent series extension comes from a global cover for any base curve if G is a p-group, and he gave a condition for the uniqueness of such an extension. Using a generalization of Artin–Schreier theory to non-abelian p-groups, we characterize the curves Y for which this extension property holds and for which it is unique up to isomorphism, but over a more general ground field.

Tuesday, September 25, 2018, 4:00 pm
Mathematics and Science Center: W301

Mathematics
Emory University