Dissertation Defense

Local-global principles for norm one tori over semi-global fields.

Sumit Chandra Mishra
Emory University

Abstract: Let $K$ be a complete discretely valued field with residue field $k$ (e.g. $k((t))$). Let $n$ be an integer coprime to $\text{char}(k)$. Let $F = K(x)$ be the rational function field in one variable over $F$ and $L/F$ be any Galois extension of degree $n$. Suppose that either $k$ is algebraically closed or $k$ is finite field containing a primitive $n$th root of unity. Then we show that an element in $F^?$ is a norm from the extension $L/F$ if and only if it is a norm from the corresponding extensions over the completions of $F$ at all discrete valuations of $F$. We also prove that such a local-global principle holds for product of norms from cyclic extensions of prime degree if $k$ is algebraically closed.

Tuesday, March 24, 2020, 4:00 pm
https://emory.zoom.us/j/382949597

Advisor: Suresh Venapally

Mathematics
Emory University