

ALGEBRA SEMINAR

Mr. Lyndon meet Mr. Magnus: Formal Power Series Representations of Free Exponential Groups

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ABSTRACT: Let F be a free group and suppose $f \neq 1$ lies in F . Suppose the centralizer of f in F is generated by φ . Then the solution set of the one variable equation $xf = fx$ over F is given by the values in F of the *parametric word* φ^t where t is an integral parameter. φ^t lives in the most unconstrained group $F^{\mathbf{Z}[t]}$ containing F and admitting exponents from the integral polynomial ring $\mathbf{Z}[t]$. One way to get our hands on $F^{\mathbf{Z}[t]}$ is to embed it into the group of units of a ring of formal power series in noncommuting indeterminates.

Monday, October 15, 2007, 1:40 – 2:30 pm,
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