



*Poster*

## IV Seminar on Categories and Applications

Bellaterra, 6 to 9 of June of 2007

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*Homological characterization of nilpotent multiplicative Lie Rings*

A multiplicative Lie ring is a group with a binary function that satisfies a non commutative version of usual axioms of Lie commutator. We define an homology theory of multiplicative Lie rings by cotriple homology [1]. A five term exact sequence with the homology groups in low dimensions is obtained.

We also derive the homological characterization of the nilpotent multiplicative Lie rings by extending Stambach and Stallings theorems of groups.

**References:**

- [1] M. Barr, J. Beck, *Homology and standard constructions*. Lecture Notes in Math. 80, 245–335, Springer, 1969.
- [2] U. Stambach, *Homology in Group Theory*. Lecture Notes in Math. 359, Springer, 1973.
- [3] J. Stallings, *Homology and central series of groups*. J. Algebra 2 (1965) 170–181.

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