SANO, segunda reunión

Seminario de Álgebra No Conmutativa

Granada, 23 de abril de 2004

Corings and colimits
Erwin De Groot, Bruselas
10h. Aula M-2, Facultad de Ciencias

Modules over quasialgebras
Florin Panaite, Bucarest
10h. 35m. Aula M-2, Facultad de Ciencias

GK-dimension: a dimension function for SINGULAR/PLURAL
Javier Lobillo, Granada
11h. 10m. Aula de Ordenadores FISYMAT (M-8), Facultad de Ciencias

CAFÉ
11h. 40m. Cafetería, Facultad de Ciencias

Infinite comatrix corings and locally projective modules
Joost Vercruysse, Bruselas
12h. 10m. Aula M-2, Facultad de Ciencias

The quantum double for quasi-triangular and factorizable quasi-Hopf algebras
Daniel Bulacu, Bucarest
12h. 45m. Aula M-2, Facultad de Ciencias

Comatrices finies d'un coanneau
Laiachi El Kaoutit, Granada
13h. 20m. Aula M-2, Facultad de Ciencias

Proyecto de Investigación BFM2001-3141, MCYT
"Métodos algebraicos y computacionales en grupos cuánticos"

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ABSTRACTS

Corings and colimits

Erwin De Groot, Bruselas

10h. Aula M-2, Facultad de Ciencias

Abstract

Following the approach of J. Gómez-Torrecillas and L. El Kaoutit we obtain a coring as a colimit using a pair of special functors. We describe a second way to have as colimit a coring and look for a connection between the two methods. Finally we attempt to make a comatrix coring from a locally projective module in the sense of Anh and Marki using our second functorial approach.

Modules over quasialgebras

Florin Panaite, Bucarest

10h. 35m. Aula M-2, Facultad de Ciencias

Abstract

We will discuss properties of modules over quasialgebras (=module algebras over quasi-Hopf algebras) and some related topics such as quasi-Hopf smash products, endomorphism quasialgebras etc.

GK-dimension: a dimension function for SINGULAR::PLURAL

Javier Lobillo, Granada

11h. 10m. Aula de Ordenadores FISYMAT (M-8), Facultad de Ciencias

Abstract

Singular::Plural is the noncommutative extension of Singular, a symbolic computation software devoted to commutative algebra and developed in the University of Kaiserlautern. One of the main disadvantages of Singular::Plural was the absence of a dimension function. We have developed a library for Singular::Plural to compute the Gelfand-Kirillov dimension of finitely generated left modules over PBW algebras (also called G-algebras). This computation is done via the computation of Groebner bases of modules with respect to suitable weighted orders which can be computed for any PBW algebra.

Infinite comatrix corings and locally projective modules

Joost Vercruysse, Bruselas

12h. 10m. Aula M-2, Facultad de Ciencias

Abstract

There exists a nice formulation of the classical descent theory within the framework of corings. It is in this setting that descent theory has been generalized from ringextensions to (first) finitely generated and projective (bi)modules and direct sums of these modules. We introduce a further generalization to locally projective modules and apply our results to the Gabriel-Popescu theorem.

The quantum double for quasi-triangular and factorizable quasi-Hopf algebras

Daniel Bulacu, Bucarest

12h. 45m. Aula M-2, Facultad de Ciencias

Abstract

Let $D(H)$ be the quantum double associated to a finite dimensional quasi-Hopf algebra H, as was defined by Hausser and Nill.

We will show that there exists a quasi-Hopf algebra projection $\pi : D(H) \to H$ covering the canonical inclusion $i_D : H \to D(H)$ if and only if H is quasi-triangular. In this situation, $D(H)$ is a biproduct of a braided Hopf algebra B^{i_D} and H, and, as vector space, B^{i_D} is isomorphic to H^*. Moreover, if H is factorizable then we will see that $D(H)$ is isomorphic to a twist of a usual (componentwise) tensor product quasi-Hopf algebra $H \otimes H$.
(Joint work with S. Caenepeel and B. Torrecillas)

Comatrices finies d'un coanneau

Laiachi El Kaoutit, Granada

13h. 20m. Aula M-2, Facultad de Ciencias

Abstract

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