Universidade do Algarve

Faculdade de Ciências e Tecnologia
Departamento de Matemática

Algarve Seminars in Mathematical Physics

Geometrization and generalization of the Kowalevski top

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A new view on the Kowalevski top and the Kowalevski integration procedure is presented. The novelty of our approach is based on the following observations: First, the so-called fundamental Kowalevski equation is an instance of a pencil equation of the theory of conics which leads us to a new geometric interpretation of the Kowalevski variables. The second is observation of the key algebraic property of the pencil equation which is followed by introduction and study of a new class of **discriminantly separable polynomials**. All steps of the Kowalevski integration procedure are now derived as easy and transparent logical consequences of our theory of discriminantly separable polynomials. The third observation connects the Kowalevski change of variables with the theory of two-valued Buchstaber-Novikov groups.

Schedule: September 21, 2009 at 14:30
Venue: C2-2.11

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