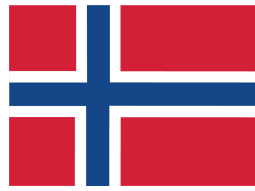


NILS-ABEL-CM SEMINAR



Martes, 7 de octubre de 2014

10:00 h., Aula Gris 1 (ICMat, Campus de Cantoblanco)

Alexander Lundervold

Høgskolen i Bergen

The what and how of Lie–Butcher series

Resumen:

I will talk about some relatively recent developments in the theory of Butcher series. Butcher series belong to the field of geometric numerical integration, whose aim it is to construct and study numerical integration methods for differential equations preserving some geometric structure of the underlying system. I will focus on some of the algebraic underpinnings of Butcher series, and the generalization of Butcher series to numerical integration methods for differential equations on manifolds, the so-called Lie–Butcher series. The talk aims to serve as one of the starting points for our discussions during the NILS project.

References (available on the arXiv):

- (1) Lundervold. Munthe–Kaas. On algebraic structures of numerical integration on vector spaces and manifolds, 2014.
- (2) Lundervold. Munthe–Kaas. On post-Lie algebras, Lie–Butcher series and moving frames, 2013.