

# De *Madrid* al *Cosmos*

## Einstein-Yang-Mills-Lorentz Black Holes

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**Abstract:** Since the discovery of the first non-abelian solution to the Einstein-Yang-Mills (EYM) theory done by Bartnik and McKinnon, a large number of properties and different solutions have been obtained. As they manifestly violate the non-hair conjecture, they have attracted much attention and encouraged a deep search for other black hole geometries.

In this talk, first we will review the most relevant particle-like and black hole solutions for such a theory. In addition, we will focus on the EYM-SO(N) model and establish a particular equivalence between this case and a certain class of theories with torsion within Riemann-Cartan space-times, in order to simplify the problem of finding exact solutions to the EYM equations. Finally, solutions for the torsion-free and the non-vanishing torsion with rotation and reflection symmetries will be presented by the explicit use of this method.

Lunes 07 de marzo, 16:00 h.  
Sala de Juntas  
CFMAC-CSIC (Serrano, 113 bis)

Ciclo de seminarios organizado conjuntamente por los grupos

- *Teorías Efectivas en Física Moderna* (UCM)
- *Gravitación y Cosmología* (IEM-CSIC)

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