SEMINARIO
Departamentos de Física Teórica I y II
Universidad Complutense de Madrid

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TITULO: **Projective simulation for learning agents: formalism and performances**

LUGAR: FACULTAD DE CIENCIAS FÍSICAS UCM
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ABSTRACT

In this talk I will describe the model of projective simulation (PS), a novel approach to artificial intelligence (AI) based on the stochastic processing of episodic memory, which was first introduced in [1]. The underlying formalism will be explained, and the main features of the model will be highlighted. This will be followed by presenting the performance of the model in terms of ``learning time" and ``efficiency" (defined during the talk), where a variety of learning scenarios will be considered. In addition, the performance of the PS model will be compared with those of Q-learning and ``learning classier systems", two popular representatives of AI models [2]. Finally, some of our recent observations will be discussed, together with a future outlook.

[1] Briegel, H. J. & De las Cuevas, G. ``Projective simulation for artificial intelligence." *Sci. Rep.* **2**, 400, (2012).

[2] Mautner, J., Makmal, A., Manzano, D., Tiersch, M. & Briegel, H. J. ``Projective simulation for classical learning agents: a comprehensive investigation.", in preparation.