

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

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**TITULO:** Controlling chemical reactions via long-range interactions

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**ABSTRACT**

Control of scattering properties of ultracold systems can be achieved by modifying the effective long-range interaction between particles, e.g., using magnetically tunable Feshbach resonances. In this presentation, we discuss two different approaches to enhance reaction rate of chemical reactions. The first is by orienting molecules, and the second is by using Rydberg-dressing. We illustrate the first approach in the case of photoassociation of dimers into tetramers, and the second in a reaction dominated by a barrier.