

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

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**TITULO:** **New and old tools for resonance phenomenology: the Padé approximants**

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**ABSTRACT**

Based on the mathematically well defined Padé Theory, a theoretically safe new procedure for the extraction of the pole mass and width of a resonance is proposed. In particular, thanks to the Montessus de Ballore theorem we are able to unfold the Second Riemann Sheet of an amplitude to search for the position of resonance poles in the complex plane. The method is systematic and provides a model-independent treatment of the prediction and the corresponding errors of the approximation. Likewise, it can be used in combination with other well-established approaches, such as dispersive techniques, to improve future determinations of resonance parameters.