

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

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TITULO: Confluent chains of Darboux transformations: enlarged shape invariance and new orthogonal polynomials

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ABSTRACT:

We construct rational extensions of the Darboux-Pöschl-Teller and isotonic potentials via two-step confluent Darboux transformations. The former are strictly isospectral to the initial potential, whereas the latter are only quasi-isospectral. Both are associated to new families of orthogonal polynomials, which, in the first case, depend on a continuous parameter. We also prove that these extended potentials possess an enlarged shape invariance property. This is a joint work with Christiane Quesne.