

8th International Conference on Symmetries and Integrability of Difference  
Equations (SIDE8) **June 22–28, 2008**  
8<sup>e</sup> *Conférence internationale “Symétrie et intégrabilité des équations aux  
différences”* (SIDE8) **22–28 juin, 2008**

## Galoisian approach to supersymmetric quantum mechanics—Work in progress

**Primitivo Belén Acosta Humánez**

Departamento Matemática Aplicada II

Universidad Politécnica de Cataluña

Campus Nord - Edificio OMEGA - Despacho 420

C/ Jordi Girona, 1-3, 08034 Barcelona

SPAIN

`primitivo.acosta@upc.edu`

### **Abstract**

The aim of this talk is to show some partial results of my Phd thesis concerning to the relationship between Differential Galois Theory and SUSY QM (Supersymmetric Quantum Mechanics). In particular, shape invariants, exactly solvable and quasi-solvable potentials will be studied from a galoisian point of view, in where Darboux transformation and some families of orthogonal polynomials play an important role to determine their quantum integrability.

**This is a joint work with Juan J. Morales-Ruiz.**