

Meeting: 1006, Lubbock, Texas, SS 3A, Special Session on Classical and Differential Galois Theory

1006-39-108 **Jean-Pierre Ramis*** (ramis@picard.ups-tlse.fr), Institut de Mathmatiques, Universite Paul Sabatier, 118, rte de Narbonne, 31062 Toulouse cedex, France. *Classification of linear q-difference equations and Galois theory.*

We will describe a complete solution of the meromorphic (or rational) classification of complex linear q-difference equations and relate it to the description of the corresponding q-difference Galois groups. (Which are linear algebraic groups defined on the field of complex numbers). We will mainly stress on the irregular case and explain the apparition of a "wild fundamental group" similar to the wild fundamental group I introduced some years ago for the case of linear ODE. Another avatar of this group appeared recently in a work of A. Connes and M. Marcolli and plays a central role in renormalization theory in quantum Fields Theory. (Received February 10, 2005)