

**SEMINARIO DE ANÁLISIS COMPLEJO  
(COMPLEX ANALYSIS SEMINAR)**

**On the harmonic Möbius transformations**

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**Resumen / Abstract:**

It is well-known that two locally univalent analytic functions have equal Schwarzian derivative if and only if each one of them is a pre-composition of the other with a non-constant Möbius transformation.

The main goal in this talk is to identify completely the relationship between two locally univalent harmonic mappings with equal (harmonic) Schwarzian derivative. The answer is expressed as a dichotomy between two different situations.

The absence of governing second order differential equations, which are extremely helpful in the analytic case, makes this task a lot more difficult. The computations needed to deduce the main result are, thus, much more involved than in the analytic case and rely heavily on the invariance properties of the harmonic Schwarzian derivative.