

# *Commutator methods for the spectral analysis of time changes of horocycle flows*

Rafael Tiedra, Pontificia Universidad Católica de Chile

*Abstract:*

*We show that all time changes of the horocycle flow on compact surfaces of constant negative curvature have purely absolutely continuous spectrum in the orthocomplement of the constant functions. This provides an answer to a question of A. Katok and J.-P. Thouvenot on the spectral nature of time changes of horocycle flows. Our proofs rely on positive commutator methods for self-adjoint operators and the unique ergodicity of the horocycle flow.*