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Mahesh G Nerurkar* (nmahesh@crab.rutgers.edu), 311 N fifth Street, Department of Mathematics, Camden, NJ 08102. *About positive and zero exponents of $SL(2, R)$ valued cocycles over irrational rotation flows, in the smooth category.*

In the class of smooth $SL(2, \mathbb{R})$ valued cocycles over Kronecker flows, we show that (i) those which have positive exponents are C^r , ($r \in \mathbb{N}$) dense and (ii) those which are either uniformly hyperbolic or with zero exponents are C^r , ($0 < r < 1$) generic, provided the rotation number of the Kronecker flow satisfies a ‘super Liouville’ type fast periodic approximation condition. These results are actually valid within much smaller class of cocycles (for example within the class of Schrödinger cocycles). The proof is based on a result of Kotani and an argument using properties of the rotation number of a cocycle. Result (ii) is a joint work with R. Johnson. (Received January 27, 2009)