1016-37-228   **Nicolai Haydn** (`nhaydn@math.usc.edu`), Department of Mathematics, University of Southern California, Los Angeles, CA 90089, and **Huyi Hu*** (`hu@math.msu.edu`), Department of Mathematics, Michigan State University, East Lansing, MI 48824. *Convergence rates of the transfer operators for sigma finite measures.*

Consider a piecewise smooth expanding map f from the unit interval to itself such that near the origin, $f(x) = x(1 + |x|^t)$+higher order terms, where t is larger then or equal to 1. A transfer operator L of the map f is the operator from the set of continuous functions on I to itself such that the value of $(Lg)(x)$ is the average value of $g(y)$ with some weight $w(y)$, where y are the preimages of x under f.

We show that for any Holder function g on I, $L^n g- > g(0)$ uniformly as n tends to infinity, where L^n denotes the nth iterations of L, and we give the rate of convergence, which is a polynomial function of n with degree $1 - (1/t)$. (Received February 13, 2006)