

KESTABILAN OPERATOR PERRON FROBENIUS TERHADAP PEMETAAN MONOTON SEPOTONG-SEPOTONG

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INTISARI

Diberikan $S: [0,1] \rightarrow [0,1]$ pemetaan monoton sepotong-sepotong dengan titik-titik partisi a_1, a_2, \dots, a_{r-1} , $0 = a_0 < a_1 < \dots < a_r = 1$.

Pemetaan monoton sepotong-sepotong S mempunyai ukuran S invarian terhadap ukuran Lebesgue, yang eksistensinya dikemukakan oleh Lasota dan Yorke (1973).

Ada beberapa masalah dalam pemetaan monoton sepotong-sepotong seperti periodik secara Asimtotik, stabil secara statistik stabil secara asimtotik dan ukuran S -invarian. Di dalam tesis ini akan dibahas kestabilan Operator Perron Frobenius terhadap pemetaan monoton sepotong-sepotong yang memenuhi syarat tertentu.

Jika P Operator Perron Frobenius yang bersesuaian dengan S , maka $\{P^n\}$ dikatakan stabil secara asimtotik jika memenuhi

$$\left| \frac{df_n(x)}{dx} \right| \leq k f_n(x), \text{ untuk setiap } x \in (a, b), f_n = P^n f.$$

Kata kunci : pemetaan monoton sepotong-sepotong, ukuran invarian, Operator Perron Frobenius, stabil secara asimtotik.



STABILITY OF FROBENIUS-PERRON OPERATOR ON PIECEWISE MONOTONIC MAPPINGS

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ABSTRACT

Let $S : [0,1] \rightarrow [0,1]$ be a piecewise monotonic mappings with the partition points a_1, a_2, \dots, a_{r-1} , $0 = a_0 < a_1 < \dots < a_r = 1$.

Lasota and Yorke (1973) gave a positive answer that piecewise monotonic mapping S have S -invariant measures with respect to the Lebesgue measure.

There are some problems in piecewise monotonic mapping such as asymptotically periodic, statistically stable, asymptotically stable and S invariant measure. In this thesis it will be discussed Stability of Frobenius Perron Operator on piecewise monotonic mappings, with on satisfies certain conditions. If P is the Frobenius Perron Operator associated with S , then $\{P^n\}$ is said to be asymptotically stable if it satisfies.

$$\left| \frac{df_n(x)}{dx} \right| \leq k f_n(x), \text{ for every } x \in (a, b), f_n = P^n f$$

Key words : piecewise monotonic mappings, invariant measure, Frobenius-Perron Operator, asymptotically stable.