Anh, Hoang Thieu; Dieu, Nguyen Quang; Van Long, Tang

Bernstein-Markov property for compact sets in $\mathbb{C}^d$. (English) Zbl 07464303


Summary: Given a compact set $K$ in $\mathbb{C}^d$. We concern with the Bernstein-Markov property of the pair $(K, \mu)$ where $\mu$ is a finite positive Borel measure with compact support $K$. In particular, we are able to give a class of $(K, \mu)$ having the Bernstein-Markov property with the measure $\mu$ satisfies a rather weak density condition. Using this result, we construct a pair $(K, \mu)$ satisfying the Bernstein-Markov property which is not covered by the known results in [T. Bloom, Indiana Univ. Math. J. 46, No. 2, 427–452 (1997; Zbl 0930.42013)] and [T. Bloom and N. Levenberg, Trans. Am. Math. Soc. 351, No. 12, 4753–4767 (1999; Zbl 0933.31007)]. Another main result of the note is a weak characterization of Bernstein-Markov property in terms of Chebyshev constants.

MSC:

32A08 Polynomials and rational functions of several complex variables
41A17 Inequalities in approximation (Bernstein, Jackson, Nikol'skiǐ-type inequalities)
32E30 Holomorphic, polynomial and rational approximation, and interpolation in several complex variables; Runge pairs

Keywords:

polynomials; Bernstein-Markov property; approximation

Full Text: DOI

References:


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