Rate of Pole Detection Using Padé Approximants to Polynomial Expansions

Nattapong Bosuwan

Mahidol University , Thailand

nattapong.bos@mahidol.ac.th

Padé approximation and its generalizations were proved to be useful tools in localization of singularities of functions. In this work, we investigate the rate of detection of poles using orthogonal Padé and Padé-Faber approximations. We provide global estimates on this rate of detection and show that our global estimates are sharp. Our results in this paper serve as an analogue of the direct part of Gonchar's theorem in 1981 for such Padé approximants.

Joint work with Methawee Wajasat (Mahidol University).