

Ester Pérez Sinusía (Universidad de Zaragoza, Spain)

Uniform convergent expansions of special functions in terms of elementary functions

Abstract: Expansions of special functions in series with respect to different systems of functions are interesting representations from an analytical and numerical point of view. Usually, existing expansions for these functions are not simultaneously valid for small and large values of the variable. In this work, we face the problem of designing a general theory of uniform convergent expansions of special functions in terms of elementary functions valid in a large region of the complex plane that include small and large values of the variable. Error bounds and numerical experiments showing the accuracy of the approximations are given.