

Some new results on Conformable Fractional Power Series

Francisco Martínez¹, Inmaculada Martinez², Mohammed Kaabar³, and Silvestre Paredes¹

¹Universidad Politécnica de Cartagena

²Universidad Politecnica de Cartagena

³Washington State University

June 5, 2020

Abstract

In this paper, some important results of the classical power series are generalized for the fractional power series. Some of these theorems are constructed by using conformable fractional derivatives. The ratio test has been specifically established to calculate the radius of convergence of a fractional power series, and several theorems of differentiability and integrability of the sum of a power series have been discussed in the sense of conformable fractional definition. In addition, the proposed series solution has been applied for the case of conformable fractional Airy differential equation.

Hosted file

Mathematical Methods in the Applied Sciences-Conformable Power Series.rtf available at <https://authorea.com/users/330473/articles/457216-some-new-results-on-conformable-fractional-power-series>