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Mathematical Physics

Generalized Local Fractional Taylor's Formula with Local Fractional Derivative

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In the present paper, a generalized local Taylor formula with the local fractional derivatives (LFDs) is proposed based on the local fractional calculus (LFC). From the fractal geometry point of view, the theory of local fractional integrals and derivatives has been dealt with fractal and continuously non-differentiable functions, and has been successfully applied in engineering problems. It points out the proof of the generalized local fractional Taylor formula, and is devoted to the applications of the generalized local fractional Taylor formula to the generalized local fractional series and the approximation of functions. Finally, it is shown that local fractional Taylor series of the Mittag-Leffler type function is discussed.

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