Substantial, Tempered, and Shifted Fractional Derivatives: Three Faces of a Tetrahedron

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Abstract

The substantial, tempered, and shifted fractional derivatives are introduced in a unified framework. Their properties are studied and, in the light of the strict sense criterion for derivative definitions, they are characterized and assessed. In the scope of the framework, new tempered linear systems and transfer functions are introduced.

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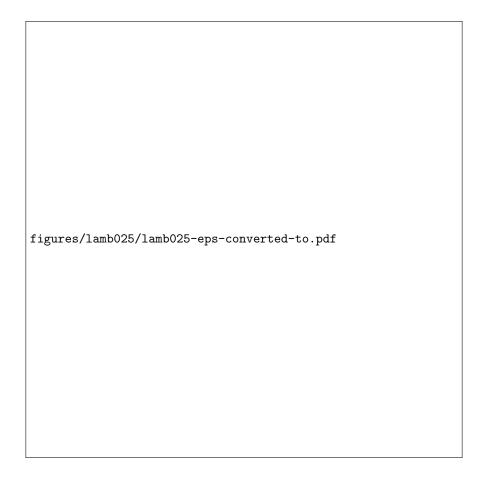
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