

## **Fractional derivatives: What are? Which choose?**

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The present day problem of multiple proposals for operators under the umbrella of “fractional derivatives” that are frauds in the sense of using abusively such designation is focussed. On the other hand, the interplay between Fractional Calculus and Applied Sciences exiges a framework for compatible integer and fractional derivatives/integrals. The classical system theory is applied to develop a unified framework to clarify these important topics in Fractional Calculus. It is shown how suitable fractional formulations are really extensions of the integer order definitions currently used in applications. The particular case of fractional linear systems is considered and the problem of initial conditions is tackled.