

QUO VADIMUS

Applied Fractional Calculus

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Key issues facing the AFC community

- Need to show that “fractional calculus” enables better performance (result) than the best achievable ones previously using “integer-order calculus”
- Need to show that “fractional calculus” enables new science discovery.
- Root causes of “fractional dynamics” and characterization
 - dynamic long memory effect,
 - randomness/stochasticity with changing distributions,
 - multi-scale, cross-scale, scale-richness, scale-dynamic
- Complexity changeability (e.g. climate change, human well-being)
 - quantify the complexity and then tune the quantity?
 - by the right fractional calculus math framework?