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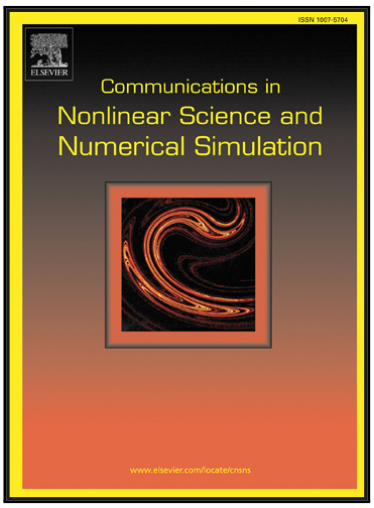

A fractal derivative model for the characterization of anomalous diffusion in magnetic resonance imaging

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PII: S1007-5704(16)30108-3
DOI: 10.1016/j.cnsns.2016.04.006
Reference: CNSNS 3827

To appear in: *Communications in Nonlinear Science and Numerical Simulation*

Received date: 20 November 2015
Revised date: 8 March 2016
Accepted date: 3 April 2016

Please cite this article as: Yingjie Liang , Allen Q. Ye , Wen Chen , Rodolfo G. Gatto , Luis Colon-Perez , Thomas H. Mareci , Richard L. Magin , A fractal derivative model for the characterization of anomalous diffusion in magnetic resonance imaging, *Communications in Nonlinear Science and Numerical Simulation* (2016), doi: 10.1016/j.cnsns.2016.04.006

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Highlights

- A fractal derivative model is introduced to detect the anomalous diffusion in MRI.
- The Hausdorff dimension of the diffusion trajectory is linked to the derivative order.
- Spectral entropy is considered a measure to characterize the complexity of diffusion.
- The parameters α, $D_{\alpha,\beta}$ and spectral entropy are biomarkers to separate neural tissues.
- The fractal model has practical advantages from the views of accuracy and efficiency.

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