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**Testing time series irreversibility using complex
network methods**

JONATHAN F. DONGES, REIK V. DONNER and JÜRGEN KURTHS

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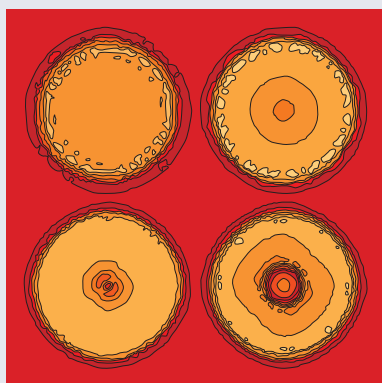
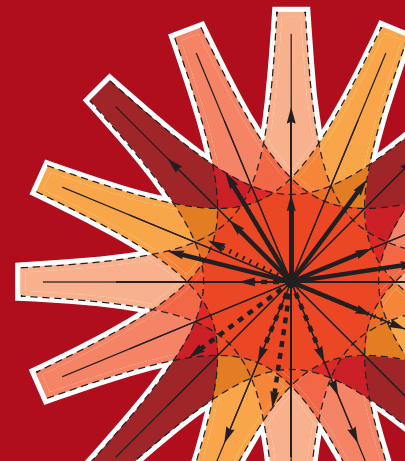
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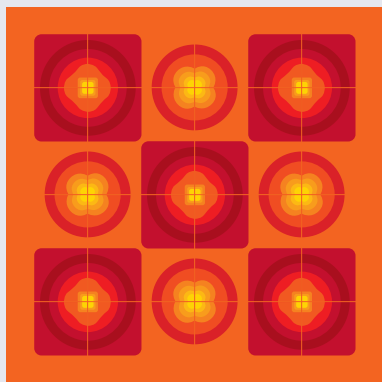
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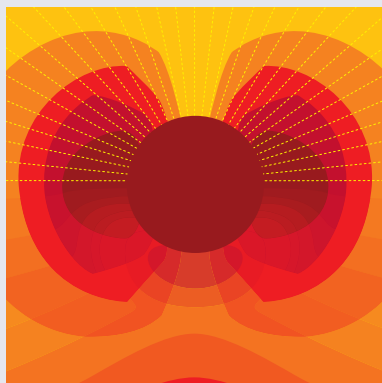
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Biaxial strain on lens-shaped quantum rings of different inner radii, adapted from **Zhang et al** 2008 *EPL* **83** 67004.



Artistic impression of electrostatic particle-particle interactions in dielectrophoresis, adapted from **N Aubry and P Singh** 2006 *EPL* **74** 623.



Artistic impression of velocity and normal stress profiles around a sphere that moves through a polymer solution, adapted from **R Tuinier, J K G Dhont and T-H Fan** 2006 *EPL* **75** 929.

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Image: Ornamental multiplication of space-time figures of temperature transformation rules (adapted from T. S. Bíró and P. Ván 2010 *EPL* **89** 30001; artistic impression by Frédérique Swist).

Erratum

Testing time series irreversibility using complex network methods

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Due to a technical problem occurred in production, figs. 4 and 5 were displayed in an erroneous form, *i.e.* some of the panels and the relative labels were positioned in a wrong way. We publish here again the correct figures sincerely apologizing to the authors for the unpleasant inconvenience.

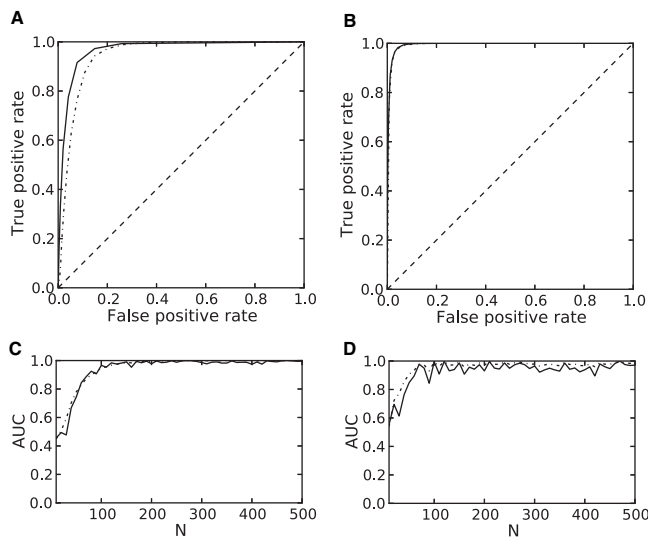


Fig. 4: (A), (B): ROC curves for the ((A), (C)) VG- and ((B), (D)) HVG-based tests for reversibility comparing the rejection rates for each $M = 10000$ realisations of AR1 (false positive rate) and Hénon time series (true positive rate) with varying critical p -value of the KS statistic ($N = 100$). (C), (D): area under the ROC curve (AUC) characterising the discriminative performance of all tests depending on time series length N . Solid and dash-dotted lines indicate degree- and clustering-based tests, respectively.

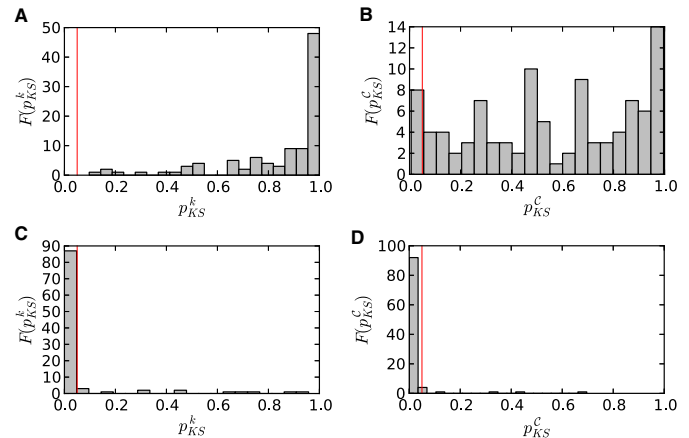


Fig. 5: (Colour on-line) Frequency distributions of p -values of the KS test for comparing the distributions of retarded/advanced degree k_i^r, k_i^a ((A), (C)) and local clustering coefficient C_i^r, C_i^a ((B), (D)) of standard VGs from a set of $M = 100$ EEG time series segments of length $N = 4096$. Recordings originate from healthy subjects with eyes open (data set A) ((A), (B)) and epileptic patients during seizure (data set E) ((C), (D)). Vertical red lines indicate the chosen significance level of 0.05.

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