Percolate: an anthropological physics platform for social harnessing

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Draft

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complex networks | software toolbox | anthropological physics

Abbreviations: RDF, resource description framework; BoW, bag of words; PyPI, python package index

Introduction

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$$\frac{D\theta}{Dt} = \frac{\partial\theta}{\partial t} + u \cdot \nabla\theta = 0 \qquad [1]$$

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Results

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Simulations.

Simulation 1

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Simulation 2

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Discussion

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Reserved for Publication Footnotes

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Materials and Methods

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Definition 1. *A bounded function θ is a weak solution of QG if for any $\phi \,\epsilon\, C_0^\infty(\mathbb{R}/_{\mathbb{Z}} \times \mathbb{R} \times [0,\varepsilon])$ we have*

$$\begin{aligned} &\int_{\mathbb{R}^+ \times \mathbb{R}/_{\mathbb{Z}} \times \mathbb{R}} \theta(x,y,t)\,\partial_t\phi\,(x,y,t)dydxdt + \\ + &\int_{\mathbb{R}^+ \times \mathbb{R}/_{\mathbb{Z}} \times \mathbb{R}} \theta\,(x,y,t)u(x,y,t)\cdot\nabla\phi\,(x,y,t)dydxdt = 0 \end{aligned} \quad [2]$$

where u is determined previously.

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Theorem 1. *If the active scalar θ satisfies the equation* [2], *then φ satisfies the equation*

$$\begin{aligned} \frac{\partial\varphi}{\partial t}(x,t) \;=\; &\int_{\mathbb{R}/_{\mathbb{Z}}} \frac{\frac{\partial\varphi}{\partial x}(x,t) - \frac{\partial\varphi}{\partial u}(u,t)}{\left[(x-u)^2 + (\varphi(x,t)-\varphi(u,t))^2\right]^{\frac{1}{2}}} \\ &\chi(x-u,\varphi(x,t)-\varphi(u,t))du \;+ \\ + \;&\int_{\mathbb{R}/_{\mathbb{Z}}} \left[\frac{\partial\varphi}{\partial x}(x,t) - \frac{\partial\varphi}{\partial u}(u,t)\right] \\ &\eta(x-u,\varphi(x,t)-\varphi(u,t))du + Error \end{aligned} \quad [3]$$

with $|Error| \leq C\,\delta|log\delta|$ where C depends only on $\|\theta\|_{L^\infty}$ and $\|\nabla\varphi\|_{L^\infty}$.

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Appendix

An appendix without a title.

Appendix: Appendix title

An appendix with a title.

ACKNOWLEDGMENTS. This work was partially supported by a grant from the Spanish Ministry of Science and Technology.

1. M. Belkin and P. Niyogi, Using manifold structure for partially labelled classification, Advances in NIPS, 15 (2003).
2. P. Bérard, G. Besson, and S. Gallot, Embedding Riemannian manifolds by their heat kernel, Geom. and Fun. Anal., 4 (1994), pp. 374–398.
3. R.R. Coifman and S. Lafon, Diffusion maps, Appl. Comp. Harm. Anal., 21 (2006), pp. 5–30.
4. R.R. Coifman, S. Lafon, A. Lee, M. Maggioni, B. Nadler, F. Warner, and S. Zucker, Geometric diffusions as a tool for harmonic analysis and structure definition of data. Part I: Diffusion maps, Proc. of Nat. Acad. Sci., (2005), pp. 7426–7431.
5. P. Das, M. Moll, H. Stamati, L. Kavraki, and C. Clementi, Low-dimensional, free-energy landscapes of protein-folding reactions by nonlinear dimensionality reduction, P.N.A.S., 103 (2006), pp. 9885–9890.
6. D. Donoho and C. Grimes, Hessian eigenmaps: new locally linear embedding techniques for high-dimensional data, Proceedings of the National Academy of Sciences, 100 (2003), pp. 5591–5596.
7. D. L. Donoho and C. Grimes, When does isomap recover natural parameterization of families of articulated images?, Tech. Report Tech. Rep. 2002-27, Department of Statistics, Stanford University, August 2002.
8. M. Grüter and K.-O. Widman, The Green function for uniformly elliptic equations, Man. Math., 37 (1982), pp. 303–342.
9. R. Hempel, L. Seco, and B. Simon, The essential spectrum of neumann laplacians on some bounded singular domains, 1991.
10. Kadison, R. V. and Singer, I. M. (1959) Extensions of pure states, Amer. J. Math. 81, 383-400.
11. Anderson, J. (1981) A conjecture concerning the pure states of $B(H)$ and a related theorem. in Topics in Modern Operator Theory, Birkhaüser, pp. 27-43.
12. Anderson, J. (1979) Extreme points in sets of positive linear maps on $B(H)$. J. Funct. Anal. 31, 195-217.
13. Anderson, J. (1979) Pathology in the Calkin algebra. J. Operator Theory 2, 159-167.
14. Johnson, B. E. and Parrott, S. K. (1972) Operators commuting with a von Neumann algebra modulo the set of compact operators. J. Funct. Anal. 11, 39-61.

15. Akemann, C. and Weaver, N. (2004) Consistency of a counterexample to Naimark's problem. Proc. Nat. Acad. Sci. USA 101, 7522-7525.
16. J. Tenenbaum, V. de Silva, and J. Langford, A global geometric framework for nonlinear dimensionality reduction, Science, 290 (2000), pp. 2319–2323.
17. Z. Zhang and H. Zha, Principal manifolds and nonlinear dimension reduction via local tangent space alignement, Tech. Report CSE-02-019, Department of computer science and engineering, Pennsylvania State University, 2002.

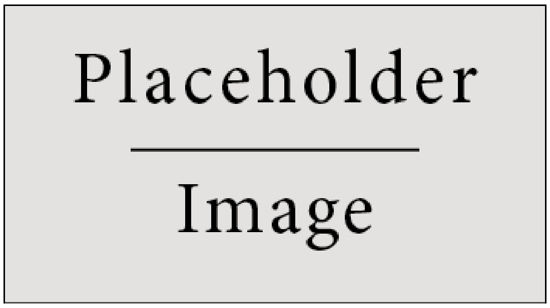

Fig. 1. Figure caption

Table 1. Table caption

Treatments	Response 1	Response 2
Treatment 1	0.0003262	0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296