Alessandra Adrover

List of Publications by Year
in descending order

143 papers	1,814 citations	304602 22 h-index	377752 34 g-index
144 all docs	144 docs citations	144 times ranked	1191 citing authors

#	ARTICLE	IF	CITATIONS
1	Inertial effects and long-term transport properties of particle motion in washboard potential. Physica A: Statistical Mechanics and Its Applications, 2022, 585, 126407.	1.2	2
2	Invariant manifold approach for quantifying the dynamics of highly inertial particles in steady and time-periodic incompressible flows. Chaos, 2022, 32, 023121.	1.0	1
3	Effect of chest physiotherapy on cystic fibrosis sputum nanostructure: an experimental and theoretical approach. Drug Delivery and Translational Research, 2022, 12, 1943-1958.	3.0	3
4	On the dynamic role of energy in underdamped particle motion. Physica A: Statistical Mechanics and Its Applications, 2022, 597, 127285.	1.2	0
5	Comparison between one- and two-way coupling approaches for estimating effective transport properties of suspended particles undergoing Brownian sieving hydrodynamic chromatography. Physics of Fluids, 2022, 34, .	1.6	7
6	Taming Taylor-Aris dispersion through chaotic advection. Journal of Chromatography A, 2022, 1673, 463110.	1.8	8
7	Swelling and Drug Release in Polymers through the Theory of Poisson–Kac Stochastic Processes. Gels, 2021, 7, 32.	2.1	5
8	Brownian Sieving Effect for Boosting the Performance of Microcapillary Hydrodynamic Chromatography. Proof of Concept. Analytical Chemistry, 2021, 93, 6808-6816.	3.2	10
9	Combined use of rheology and portable low-field NMR in cystic fibrosis patients. Respiratory Medicine, 2021, 189, 106623.	1.3	7
10	Brownian sieving enhancement of microcapillary hydrodynamic chromatography. Analysis of the separation performance based on Brenner's macro-transport theory. Journal of Chromatography A, 2021, 1659, 462652.	1.8	6
11	On the long-term simulation of stochastic differential equations for predicting effective dispersion coefficients. Physica A: Statistical Mechanics and Its Applications, 2020, 543, 123392.	1.2	6
12	A Non-Isothermal Moving-Boundary Model for Continuous and Intermittent Drying of Pears. Foods, 2020, 9, 1577.	1.9	3
13	Space-Time Inversion of Stochastic Dynamics. Symmetry, 2020, 12, 839.	1.1	0
14	Enhanced Loading Efficiency and Mucoadhesion Properties of Gellan Gum Thin Films by Complexation with Hydroxypropyl-β-Cyclodextrin. Pharmaceutics, 2020, 12, 819.	2.0	10
15	Significance of Rarefaction, Streamwise Conduction, and Viscous Dissipation on the Extended Graetz–Nusselt Problem: The Case of Finite-Length Microchannels with Prescribed Wall Heat Flux. International Journal of Chemical Engineering, 2020, 2020, 1-15.	1.4	0
16	Combining Electrostatic, Hindrance and Diffusive Effects for Predicting Particle Transport and Separation Efficiency in Deterministic Lateral Displacement Microfluidic Devices. Biosensors, 2020, 10, 126.	2.3	8
17	Gelation of the internal core of liposomes as a strategy for stabilization and modified drug delivery II. Theoretical analysis and modelling of in-vitro release experiments. International Journal of Pharmaceutics, 2020, 585, 119471.	2.6	2
18	Gelation of the internal core of liposomes as a strategy for stabilization and modified drug delivery I. Physico-chemistry study. International Journal of Pharmaceutics, 2020, 585, 119467.	2.6	7

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19	3-D Modeling of Dehydration Kinetics and Shrinkage of Ellipsoidal Fermented Amazonian Cocoa Beans. Processes, 2020, 8, 150.	1.3	3
20	Mathematical Modelling in Food Science through the Paradigm of Eggplant Drying. , 2020, , 276-293.		0
21	A moving boundary model for food isothermal drying and shrinkage: Oneâ€dimensional versus twoâ€dimensional approaches. Journal of Food Process Engineering, 2019, 42, e13178.	1.5	2
22	Laminar dispersion at low and high Peclet numbers in a sinusoidal microtube: Point-size versus finite-size particles. Physics of Fluids, 2019, 31, .	1.6	18
23	On the Three-Dimensional Structure of the Flow through Deterministic Lateral Displacement Devices and Its Effects on Particle Separation. Processes, 2019, 7, 498.	1.3	5
24	Space-time resolution of size-dispersed suspensions in Deterministic Lateral Displacement microfluidic devices. European Physical Journal: Special Topics, 2019, 228, 5-23.	1.2	5
25	A Moving Boundary Model for Isothermal Drying and Shrinkage of Chayote Discoid Samples: Comparison between the Fully Analytical and the Shortcut Numerical Approaches. International Journal of Chemical Engineering, 2019, 2019, 1-13.	1.4	2
26	Gellan Gum/Laponite Beads for the Modified Release of Drugs: Experimental and Modeling Study of Gastrointestinal Release. Pharmaceutics, 2019, 11, 187.	2.0	30
27	Exact moment analysis of transient dispersion properties in periodic media. Physics of Fluids, 2019, 31, .	1.6	21
28	A moving boundary model for food isothermal drying and shrinkage: General setting. Journal of Food Engineering, 2019, 244, 178-191.	2.7	16
29	A moving boundary model for food isothermal drying and shrinkage: A shortcut numerical method for estimating the shrinkage factor. Journal of Food Engineering, 2019, 244, 212-219.	2.7	10
30	Taming axial dispersion in hydrodynamic chromatography columns through wall patterning. Physics of Fluids, 2018, 30, .	1.6	21
31	Application of the theory of stochastic processes possessing finite propagation velocity to transport problems in polymeric systems. AIP Conference Proceedings, 2018, , .	0.3	0
32	Experimental and Modeling Study of Drug Release from HPMC-Based Erodible Oral Thin Films. Pharmaceutics, 2018, 10, 222.	2.0	23
33	Design of a tunable nanocomposite double network hydrogel based on gellan gum for drug delivery applications. European Polymer Journal, 2018, 104, 184-193.	2.6	47
34	Effect of glycerol on the physical and mechanical properties of thin gellan gum films for oral drug delivery. International Journal of Pharmaceutics, 2018, 547, 226-234.	2.6	49
35	Laminar dispersion at low and high Peclet numbers in finite-length patterned microtubes. Physics of Fluids, 2017, 29, .	1.6	23
36	DESIGN AND CHARACTERIZATION OF A BIOCOMPATIBLE PHYSICAL HYDROGEL BASED ON SCLEROGLUCAN FOR TOPICAL DRUG DELIVERY. Carbohydrate Polymers, 2017, 174, 960-969.	5.1	23

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37	Swelling and drug release from oral thin films (OTFs). AIP Conference Proceedings, 2016, , .	0.3	0
38	Swelling Kinetics of HPMC Tablets. Chemical Engineering Communications, 2015, 202, 876-884.	1.5	7
39	Release kinetics from oral thin films: Theory and experiments. Chemical Engineering Research and Design, 2015, 98, 188-201.	2.7	19
40	In vitro dissolution testing of oral thin films: A comparison between USP 1, USP 2 apparatuses and a new millifluidic flow-through device. Chemical Engineering Research and Design, 2015, 95, 173-178.	2.7	31
41	Mass/heat transfer through laminar boundary layer in axisymmetric microchannels with nonuniform cross section and fixed wall concentration/temperature. International Journal of Heat and Mass Transfer, 2014, 68, 21-28.	2.5	6
42	Isothermal kinetics of char-coal gasification with pure CO_2. Fuel, 2014, 123, 151-157.	3.4	41
43	Study of release kinetics and diffusion coefficients in swellable cellulosic thin films by means of a simple spectrophotometric technique. Chemical Engineering Research and Design, 2014, 92, 2550-2556.	2.7	8
44	Mass transfer through laminar boundary layer in microchannels with nonuniform cross section : The effect of wall shape and curvature. International Journal of Heat and Mass Transfer, 2013, 60, 624-631.	2.5	5
45	Effect of secondary flows on dispersion in finite-length channels at high Peclet numbers. Physics of Fluids, 2013, 25, .	1.6	11
46	Convection-dominated dispersion in channels with fractal cross-section. Physics of Fluids, 2011, 23, 013603.	1.6	6
47	Spectral characterization of static mixers. The S–shaped micromixer as a case study. AICHE Journal, 2010, 56, 318-335.	1.8	10
48	Laminar convective heat transfer across fractal boundaries. Europhysics Letters, 2010, 90, 14002.	0.7	12
49	Scaling of the density of state of the weighted Laplacian in the presence of fractal boundaries. Physical Review E, 2010, 81, 027202.	0.8	2
50	Spectral analysis of the weighted Laplacian in slip and no-slip flows. Physical Review E, 2009, 80, 066302.	0.8	4
51	Early stage oxidation of AISI 304 stainless steel: role of temperature and oxygen pressure. Materials at High Temperatures, 2009, 26, 31-38.	0.5	7
52	Spectral characterization of mixing properties of annular MHD micromixers. Microfluidics and Nanofluidics, 2009, 6, 747-761.	1.0	14
53	Convection-Dominated Dispersion Regime in Wide-Bore Chromatography: A Transport-Based Approach To Assess the Occurrence of Slip Flows in Microchannels. Analytical Chemistry, 2009, 81, 8009-8014.	3.2	25
54	Laminar dispersion at high Péclet numbers in finite-length channels: Effects of the near-wall velocity profile and connection with the generalized Leveque problem. Physics of Fluids, 2009, 21, .	1.6	35

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55	Characterizing relaxation timescales and overall steady-state efficiency of continuous inflow-outflow micromixers. Houille Blanche, 2009, 95, 135-142.	0.3	1
56	Feasibility, efficiency and transportability of short-horizon optimal mixing protocols. Journal of Fluid Mechanics, 2008, 597, 199-231.	1.4	33
57	Influence of surface heterogeneity in electroosmotic flowsâ€"Implications in chromatography, fluid mixing, and chemical reactions in microdevices. Applied Surface Science, 2007, 253, 5785-5790.	3.1	2
58	The structure of slow invariant manifolds and their bifurcational routes in chemical kinetic models. Computers and Chemical Engineering, 2007, 31, 1456-1474.	2.0	6
59	Explosion limits and runaway criteria: A stretching-based approach. Chemical Engineering Science, 2007, 62, 1171-1183.	1.9	16
60	Stretching-based diagnostics and reduction of chemical kinetic models with diffusion. Journal of Computational Physics, 2007, 225, 1442-1471.	1.9	22
61	Slow Manifold Structure in Explosive Kinetics. 2. Extension to Higher Dimensional Systems. Journal of Physical Chemistry A, 2006, 110, 13463-13474.	1.1	4
62	Foundations of laminar chaotic mixing and spectral theory of linear operators. Chemical Engineering Science, 2006, 61, 2754-2761.	1.9	13
63	Natural tangent dynamics with recurrent biorthonormalizations: A geometric computational approach to dynamical systems exhibiting slow manifolds and periodic/chaotic limit sets. Physica D: Nonlinear Phenomena, 2006, 213, 121-146.	1.3	16
64	Slow Manifold Structure in Explosive Kinetics. 1. Bifurcations of Points-at-Infinity in Prototypical Models. Journal of Physical Chemistry A, 2006, 110, 13447-13462.	1.1	10
65	Invariant structures and multifractal measures in 2d mixing systems. , 2005, , 141-155.		0
66	On the use of the pulsed-convection approach for modelling advection-diffusion in chaotic flowsâ€"A prototypical example and direct numerical simulations. Physica A: Statistical Mechanics and Its Applications, 2005, 348, 37-73.	1.2	6
67	Biorthogonalization, geometric invariant properties and rate-based estimate of Lyapunov spectra. Physics Letters, Section A: General, Atomic and Solid State Physics, 2005, 342, 421-429.	0.9	3
68	Symmetric product measures: Binomial processes and invariant manifold intersections in dynamical systems. Physica A: Statistical Mechanics and Its Applications, 2005, 356, 447-467.	1.2	1
69	Spectral Properties and Transport Mechanisms of Partially Chaotic Bounded Flows in the Presence of Diffusion. Physical Review Letters, 2004, 92, 114101.	2.9	36
70	Structural modelling for the dissolution of non-porous ores: dissolution with sporulation. Chemical Engineering Journal, 2004, 99, 89-104.	6.6	11
71	The sporulation model for manganiferous ore dissolution. Chemical Engineering Science, 2004, 59, 5107-5112.	1.9	2
72	Eigenvalueâ€"eigenfunction analysis of infinitely fast reactions and micromixing regimes in regular and chaotic bounded flows. Chemical Engineering Science, 2004, 59, 2125-2144.	1.9	41

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73	Effects of self-stress on hydrogen diffusion in Pd membranes in the coexistence of α and β phases. Journal of Alloys and Compounds, 2004, 368, 287-297.	2.8	6
74	Advection diffusion in nonchaotic closed flows: Non-Hermitian operators, universality, and localization. Physical Review E, 2004, 70, 046224.	0.8	17
75	Modal reduction of PDE models by means of Snapshot Archetypes. Physica D: Nonlinear Phenomena, 2003, 182, 23-45.	1.3	10
76	Characterization of thin wall Pd–Ag rolled membranes. International Journal of Hydrogen Energy, 2003, 28, 105-112.	3.8	52
77	Steady-state concentration profiles of hydrogen in tubular metallic membranes. International Journal of Hydrogen Energy, 2003, 28, 1279-1284.	3.8	10
78	Enhanced diffusion regimes in bounded chaotic flows. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 312, 355-362.	0.9	20
79	Closed-form solution of abrasion and abrasion–dissolution kinetic models. Chemical Engineering Journal, 2003, 94, 127-137.	6.6	3
80	Experimental validation of a correlation-based model for permeability. Chemical Engineering Science, 2003, 58, 2449-2454.	1.9	1
81	Stress-induced diffusion of hydrogen in metallic membranes: cylindrical vs. planar formulation. I. Journal of Alloys and Compounds, 2003, 358, 268-280.	2.8	22
82	Stress-induced diffusion of hydrogen in metallic membranes: cylindrical vs. planar formulation. II. Journal of Alloys and Compounds, 2003, 358, 157-167.	2.8	5
83	EXTERIOR ALGEBRA-BASED ALGORITHMS TO ESTIMATE LIAPUNOV SPECTRA AND STRETCHING STATISTICS IN HIGH-DIMENSIONAL AND DISTRIBUTED SYSTEMS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2002, 12, 353-368.	0.7	8
84	Quantitative Analysis of Mixing Structures in Chaotic Flows Generated by Infinitely Fast Reactions in the Presence of Diffusion. Journal of Physical Chemistry A, 2002, 106, 5722-5736.	1.1	13
85	Modified model for the regulation of the tryptophan operon inEscherichia coli. Biotechnology and Bioengineering, 2002, 80, 297-304.	1.7	13
86	A closed-form solution of population-balance models for the dissolution of polydisperse mixtures. Chemical Engineering Journal, 2002, 87, 275-284.	6.6	13
87	Two-layer shrinking-core model: parameter estimation for the reaction order in leaching processes. Chemical Engineering Journal, 2002, 90, 231-240.	6.6	36
88	Construction of approximate inertial manifold by decimation of collocation equations of distributed parameter systems. Computers and Chemical Engineering, 2002, 26, 113-123.	2.0	14
89	A spectral approach to reaction/diffusion kinetics in chaotic flows. Computers and Chemical Engineering, 2002, 26, 125-139.	2.0	34
90	Tracer Dispersion in Stirred Tank Reactors: Asymptotic Properties and Mixing Characterization. Canadian Journal of Chemical Engineering, 2002, 80, 580-590.	0.9	7

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91	On Some Properties of Three-dimensional Mixing Systems. , 2002, , 1-20.		0
92	Collocation Methods and Inertial Manifold Theory for the Modal Reduction of Dissipative Distributed Systems. , 2002, , 21-37.		0
93	On the Interplay between Advection and Diffusion in Closed Laminar Chaotic Flows. Journal of Physical Chemistry A, 2001, 105, 4908-4916.	1.1	12
94	Global geometry and coarse-grained formulation of the evolution of pointwise intermaterial interface measure in chaotic flows. Chemical Engineering Science, 2001, 56, 3387-3399.	1.9	4
95	Geometric and statistical properties in the evolution of material surfaces in three-dimensional chaotic flows. Physics of Fluids, 2001, 13, 1254-1262.	1.6	2
96	Geometry of Reaction Interfaces in Chaotic Flows. Physical Review Letters, 2001, 88, 024501.	2.9	22
97	Is Tsallis Thermodynamics Nonextensive?. Physical Review Letters, 2001, 88, 020601.	2.9	44
98	Coarse-grained formulation for the time evolution of intermaterial contact area density in mixing systems. Computer Aided Chemical Engineering, 2000, , 451-456.	0.3	0
99	Wavelet-like collocation method for finite-dimensional reduction of distributed systems. Computers and Chemical Engineering, 2000, 24, 2687-2703.	2.0	10
100	Invariant properties of a class of exactly solvable mixing transformations â€" A measure-theoretical approach to model the evolution of material lines advected by chaotic flows. Chaos, Solitons and Fractals, 2000, 11, 607-630.	2.5	4
101	Invariant geometric properties of a class of 3D chaotic flows. Physica D: Nonlinear Phenomena, 2000, 140, 50-68.	1.3	4
102	The geometry of mixing in 2-d time-periodic chaotic flows. Chemical Engineering Science, 2000, 55, 381-389.	1.9	11
103	The intermaterial area density generated by time- and spatially periodic 2D chaotic flows. Chemical Engineering Science, 2000, 55, 1497-1508.	1.9	51
104	Measure-theoretical properties of the unstable foliation of two-dimensional differentiable area-preserving systems. Physical Review E, 1999, 60, 347-362.	0.8	13
105	Continuous formulation of global invariant properties of 2D time-periodic chaotic flows. Physics Letters, Section A: General, Atomic and Solid State Physics, 1999, 256, 31-38.	0.9	0
106	Geometric properties of quasiperiodic orbits of 2D Hamiltonian systems. Physics Letters, Section A: General, Atomic and Solid State Physics, 1999, 259, 451-459.	0.9	1
107	The geometry of mixing in time-periodic chaotic flows. I. Asymptotic directionality in physically realizable flows and global invariant properties. Physica D: Nonlinear Phenomena, 1999, 132, 298-324.	1.3	48
108	Shortcut Method for Lumping Diffusionâˆ’Reaction Kinetics in Lamellar Systems. Industrial & Engineering Chemistry Research, 1999, 38, 4985-4992.	1.8	0

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109	Probabilistic Analysis of the Dual Siteâ˘Bond Model: The Self-Consistent Caseâ€. Langmuir, 1999, 15, 5961-5969.	1.6	3
110	Non-uniform stationary measure properties of chaotic area-preserving dynamical systems. Physica A: Statistical Mechanics and Its Applications, 1998, 254, 451-465.	1.2	15
111	Long-range correlation properties of area-preserving chaotic systems. Physica A: Statistical Mechanics and Its Applications, 1998, 253, 143-153.	1.2	11
112	Self-Similar Spatiotemporal Structure of Intermaterial Boundaries in Chaotic Flows. Physical Review Letters, 1998, 81, 3395-3398.	2.9	112
113	Analytic expression for the short-time rate of growth of the intermaterial contact perimeter in two-dimensional chaotic flows and Hamiltonian systems. Physical Review E, 1998, 58, 447-458.	0.8	27
114	Nonuniform Stationary Measure of the Invariant Unstable Foliation in Hamiltonian and Fluid Mixing Systems. Physical Review Letters, 1998, 81, 3864-3867.	2.9	31
115	Scaling and scaling crossover for transport on anisotropic fractal structures. Physical Review E, 1997, 55, 7304-7312.	0.8	11
116	Models of adsorption kinetics on rough surfaces. Studies in Surface Science and Catalysis, 1997, 109, 241-250.	1.5	2
117	Solution of Transport Schemes on Fractals by Means of Green Function Renormalization â€" Application to Integral Quantities. Fractals, 1997, 05, 473-491.	1.8	7
118	Solution of Unsteady-State Shrinking-Core Models by Means of Spectral/Fixed-Point Methods:Â Nonuniform Reactant Distribution and Nonlinear Kinetics. Industrial & Engineering Chemistry Research, 1997, 36, 2452-2465.	1.8	8
119	Reconstruction of Nonhomogeneous Porous Media. Industrial & Engineering Chemistry Research, 1997, 36, 5010-5014.	1.8	1
120	Renormalization Analysis and Adsorption on Fractal and Disordered Lattices in the Presence of Energetic Disorder. Langmuir, 1997, 13, 1128-1137.	1.6	7
121	A Versatile Lattice Simulator for Fluidâ˘Solid Noncatalytic Reactions in Complex Media. Industrial & Engineering Chemistry Research, 1997, 36, 4993-5009.	1.8	3
122	Hydrodynamic properties of fractals: Application of the lattice Boltzmann equation to transverse flow past an array of fractal objects. International Journal of Multiphase Flow, 1997, 23, 25-35.	1.6	12
123	Transport Phenomena on Fractals and Green-Function Renormalization. , 1997, , 308-322.		0
124	Simulation of Model Heterogeneous Surfaces in the Presence of Correlation. Langmuir, 1996, 12, 4272-4280.	1.6	6
125	Exact solution of linear transport equations in fractal mediaâ€"III. Adsorption and chemical reaction. Chemical Engineering Science, 1996, 51, 5065-5076.	1.9	22
126	Closed-form solution for the reconstruction problem in porous media. AICHE Journal, 1996, 42, 1407-1415.	1.8	28

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127	First-order kinetics in fractal catalysts: Renormalization analysis of the effectiveness factor. Chemical Engineering Science, 1996, 51, 2273-2282.	1.9	22
128	Exact solution of linear transport equations in fractal media—I. Renormalization analysis and general theory. Chemical Engineering Science, 1996, 51, 4717-4729.	1.9	36
129	Exact solution of linear transport equations in fractal media—II. Diffusion and convection. Chemical Engineering Science, 1996, 51, 4731-4744.	1.9	24
130	Analysis of controlled release in disordered structures: a percolation model. Journal of Membrane Science, 1996, 113, 21-30.	4.1	21
131	Controlled release of theophylline from water-swollen scleroglucan matrices. Journal of Membrane Science, 1996, 113, 7-20.	4.1	12
132	Analysis of linear transport phenomena on fractals. The Chemical Engineering Journal and the Biochemical Engineering Journal, 1996, 64, 45-61.	0.1	5
133	A predictive model for permeability of correlated porous media. The Chemical Engineering Journal and the Biochemical Engineering Journal, 1996, 64, 7-19.	0.1	5
134	Convection-diffusion transport in disordered structures: Numerical analysis based on the exit-time equation. Chemical Engineering Science, 1995, 50, 1001-1011.	1.9	12
135	NONLINEAR REACTION DIFFUSION SCHEMES IN CONTINUOUS KINETICS. Chemical Engineering Communications, 1994, 128, 173-196.	1.5	2
136	PREDICTION OF TRANSPORT PARAMETERS IN DISORDERED STRUCTURES: TOWARDS AN INTEGRATED LATTICE SIMULATOR. Fractals, 1994, 02, 287-290.	1.8	0
137	Multicomponent percolation: Probabilistic properties and application to nonisothermal reactions in granular materials. Physical Review E, 1994, 49, 5287-5294.	0.8	2
138	Simplified analysis of chromatographic-column dynamics. Chemical Engineering Science, 1994, 49, 541-547.	1.9	3
139	Local porosity analysis of disordered porous matrices. Studies in Surface Science and Catalysis, 1994, 87, 197-206.	1.5	0
140	Stochastic Analysis of Dispersion in Size-Exclusion Chromatographic Columns. Studies in Surface Science and Catalysis, 1994, 87, 373-382.	1.5	0
141	Influence of local fields on macroscopic transport coefficients. Chemical Engineering Science, 1993, 48, 1933-1943.	1.9	4
142	Transport in porous packings: Statistical characterization of transport, role of fluctuation and data analysis. Environmetrics, 1993, 4, 255-277.	0.6	0
143	Dynamic behavior of a reaction/diffusion system: wavelet-like collocations and approximate inertial manifolds. , 0, , .		1