

I only allow my name to go on papers to which I have made a significant scientific contribution, over and above obtaining funding. The ordering of names on a paper reflects many different conventions.

Book:

Nonlinear dynamics and chaos: where do we go from here?

S.J. Hogan, A.R. Champneys, B. Krauskopf, M. Di Bernardo, R.E. Wilson, H.M. Osinga & M.E. Homer (Eds.)

The Institute of Physics, ISBN: 0750308621 (2002)

Refereed Journal articles:

1. **Hogan, S.J.**
Some effects of surface tension on steep water waves.
J. Fluid Mech. 91, 167-180 (1979)
2. **Hogan, S.J.**
Some effects of surface tension on steep water waves. Part II.
J. Fluid Mech. 96, 417-445 (1980)
3. **Hogan, S.J.**
Some effects of surface tension on steep water waves. Part III.
J. Fluid Mech. 110, 381-410 (1981)
4. **Hogan, S.J.**
Relationships between integral properties of gravity-capillary interfacial waves.
Phys. Fluids 24, 774-775 (1981)
5. **Hogan, S.J.**
Energy flux in capillary-gravity waves.
Phys. Fluids 26, 1206-1209 (1983)
6. **Hogan, S.J.**
Subharmonic generation of deep-water capillary waves.
Phys. Fluids 27, 42-45 (1984)
7. **Hogan, S.J.**
Particle trajectories in nonlinear capillary waves.
J. Fluid Mech. 143, 243-252 (1984)
8. **Hogan, S.J.**
Particle trajectories in nonlinear gravity capillary waves.
J. Fluid Mech. 151, 105-119 (1985)
9. **Hogan, S.J.**
The fourth-order evolution equation for deep-water gravity-capillary waves.
Proc. Roy. Soc. Lond. A 402, 359-372 (1985)
10. **Hogan, S.J.**
On the accelerations in the free surface of nonlinear gravity-capillary waves.
J. Physical Oceanography 16, 1605-1624 (1986)
11. **Hogan, S.J.**
Highest waves, phase speeds and particle trajectories of nonlinear capillary waves on sheets of fluid.
J. Fluid Mech. 172, 547-563 (1986)
12. **Hogan, S.J.**
The potential form of the fourth order evolution equation for deep water gravity-capillary waves.
Phys. Fluids 29, 3479-3480 (1986)

13. **Hogan, S.J.**
The superharmonic normal mode instabilities of nonlinear deep water capillary waves.
J. Fluid Mech. 190, 165-177 (1988)
14. **Hogan, S.J.**, Gruman, I. and Stiassnie, M.
On the changes in phase speed of one train of water waves in the presence of another.
J. Fluid Mech. 192, 97-114 (1988)
15. **Hogan, S.J.**
Note on the bubbles that form at the surface of the highest capillary-gravity waves.
Phys. Fluids 31, 2366-2368 (1988)
16. Price, P.M., **Hogan, S.J.** and Horwich, A.
Tumour proliferation rate as a predictive factor in testicular teratomas.
Brit. J. Canc. 58, 525-526 (1988)
17. **Hogan, S.J.**
On the dynamics of rigid block motion under harmonic forcing.
Proc. Roy. Soc. Lond. A. 425, 441-476 (1989)
18. **Hogan, S.J.**
The many steady state responses of a rigid block under harmonic forcing.
Int. J. Earthquake Engineering and Structural Dynamics 19, 1057-1071 (1990)
19. Price, P.M., **Hogan, S.J.** and Horwich, A.
The growth rate of metastatic non-seminomatous germ cell testicular tumours measured by marker production doubling time I. Theoretical basis and practical application.
Eur. J. Cancer 26, 450-453 (1990)
20. Price, P.M., **Hogan, S.J.**, Bliss, J. M. and Horwich, A.
The growth rate of metastatic non-seminomatous germ cell testicular tumours measured by marker production doubling time II. Prognostic significance in patients treated by chemotherapy.
Eur. J. Cancer 26, 453-457 (1990)
21. **Hogan, S.J.**
The exact solution to Phillips' equation for the degree of saturation of short waves in the presence of ocean currents.
J. Fluid Mech. 223, 357-362 (1991)
22. Price, P.M., **Hogan, S.J.** and Horwich, A.
Growth rate of metastatic nonseminotamous germ-cell testicular tumours.
Eur. J. Cancer 27, 1067-1068 (1991)
23. **Hogan, S.J.**
The effect of damping on rigid block motion under harmonic forcing.
Proc. Roy. Soc. Lond. A. 437, 97-108 (1992)
24. **Hogan, S.J.**
On the dynamics of a rigid block, tethered at one corner, under harmonic forcing.
Proc. Roy. Soc. Lond. A. 439, 35-45 (1992)
25. **Hogan, S.J.**
Heteroclinic bifurcations in damped rigid block motion.
Proc. Roy. Soc. Lond. A 439, 155-162 (1992)

26. **Hogan, S.J.**, Mullin, T. and Woodford, P.
Rectilinear low-frequency shear of homogeneously aligned nematic liquid crystals.
Proc. Roy. Soc. Lond. A. 441, 559-573 (1993)
27. **Hogan, S.J.**
Slender rigid block motion.
ASCE J. Eng. Mech. 120, 11-24 (1994)
28. Duursma, G., Ockendon, J. R. and **Hogan, S.J.**
Obstacle-induced voids in two-dimensional gas fluidized beds.
Chem. Eng. Sci. 49, 233-244 (1994)
29. **Hogan, S.J.**
Rigid block dynamics confined between side-walls.
Phil. Trans. Roy. Soc. 347, 411-419 (1994) *Invited paper*
30. **Hogan, S.J.**
Slender rigid block motion - closure.
ASCE J. Eng. Mech. 121, 584-585 (1995)
31. Doole, S.H. and **Hogan, S.J.**
A piecewise linear suspension bridge model: nonlinear dynamics and orbital continuation.
Dyn. and Stab. of Systems 11, 19-47 (1996)
32. Doole, S.H. and **Hogan, S.J.**
The nonlinear dynamics of suspension bridges under harmonic forcing.
Zeit. Ang. Math. Mech. 76 (Special Issue 5), 127-128 (1996)
33. Mottram, N.J. and **Hogan, S.J.**
Disclination core structure and induced phase change in nematic liquid crystals.
Phil. Trans. Roy. Soc. 355, 2045-2064 (1997) *Invited paper*
34. Mottram, N.J. and **Hogan, S.J.**
Multiple solutions in twisted nematic liquid crystal layers.
Continuum Mechanics & Thermodynamics 9, 213-228 (1997)
35. Homer, M.E. and **Hogan, S.J.**
Graph theory and piecewise smooth dynamical systems of arbitrary dimension.
Chaos, Solitons & Fractals 10, 1869-1880 (1999)
36. Di Bernardo, M., Feigin, M.I., **Hogan, S.J.** and Homer, M.E.
Local analysis of C-bifurcations in n-dimensional piecewise smooth dynamical systems
Chaos, Solitons & Fractals 10, 1881-1908 (1999)
37. **Hogan, S.J.**
Damping in rigid block dynamics contained between side-walls.
Chaos, Solitons & Fractals 11, 495-506 (2000)
38. Doole, S.H. and **Hogan, S.J.**
Nonlinear dynamics of the extended Lazer-McKenna bridge oscillation model.
Dyn. and Stab. of Systems 15, 43-58 (2000)
39. Mottram, N.J. and **Hogan, S.J.**
Magnetic field-induced changes in molecular order in nematic liquid crystals.
Continuum Mechanics & Thermodynamics 14, 281-295 (2002)

40. **Hogan, S.J.**
Relaxation oscillations in a system with a piecewise smooth drag coefficient.
Journal of Sound and Vibration 263, 467-471 (2003)
41. Homer, M.E., **Hogan, S.J.**, Di Bernardo, M. and Williams, C.
The importance of choosing attractors for optimizing chaotic communications.
IEEE Trans. on Circuits and Systems II 51, 511-516 (2004)
42. Szalai, R., Stépán, G. and **Hogan, S.J.**
Global dynamics of low immersion high-speed milling.
Chaos 14, 1069-1077 (2004)
43. Kyrychko, Y.N., Blyuss, K.B., Gonzalez-Buelga, A., **Hogan, S.J.** and Wagg D.J.
Real-time dynamic substructuring in a coupled oscillator-pendulum system.
Proc. Roy. Soc. Lond. A. 462, 1271-1294 (2006)
Top 10 cited papers in PRSA 2006-2007. See
<http://rspa.royalsocietypublishing.org/site/misc/top10.xhtml>
44. Kyrychko, Y.N., Blyuss, K.B., Gonzalez-Buelga, A., **Hogan, S.J.** and Wagg D.J.
Stability switches in a neutral delay differential equation with application to real-time dynamic substructuring
Appl. Mech. Mat. 5-6, 79-84 (2006)
45. Kowalczyk, P., Di Bernardo, M., Champneys, A.R., **Hogan, S.J.**, Homer, M.E., Kuznetsov, Yu.A., Nordmark, A. and Piiroinen, P.T.
Two-parameter discontinuity-induced bifurcations of limit cycles: classification and open problems.
Int. J. Bifurcation & Chaos 16, 601-629 (2006)
46. Szalai, R., Stépán, G. and **Hogan, S.J.**
Continuation of bifurcations in periodic delay differential equations using characteristic matrices.
SIAM J. Sci. Computing 28, 1301-1317 (2006)
47. **Hogan, S. J.**, Higham, L. and Griffin, T.C.L.
Dynamics of a piecewise linear map with a gap.
Proc. Roy. Soc. Lond. A. 463, 49-65 (2007)
48. Colombo, A., Di Bernardo, M., **Hogan, S.J.** and Kowalczyk, P.
Complex dynamics in a relay feedback system with hysteresis and delay.
J. Nonlinear Sci. 17, 85-108 (2007)
49. Homer, M.E and **Hogan, S.J.**
Impact dynamics of large dimensional systems.
Int. J. Bifurcation & Chaos 17, 561-573 (2007)
50. Kyrychko, Y.N., **Hogan, S.J.**, Gonzalez-Buelga, A. and Wagg, D.J.
Modelling real-time dynamic substructuring using partial delay differential equations.
Proc. Roy. Soc. Lond. A. 463, 1509-1523 (2007)
51. Low, J. and **Hogan, S.J.**
Subharmonic pattern formation in a nematic cell – A 1D flexoelectric model approach
Mol. Cryst. Liq. Cryst., 478, 67/[823]–81/[837] (2007)
52. Ma, S., Lu, Q. and **Hogan, S.J.**
Double Hopf bifurcation for Stuart–Landau system with nonlinear delay feedback and delay-dependent parameters
Adv. Complex Systems 10, 423–448 (2007)

53. Takács, D., Stépán, G. and **Hogan, S.J.**
Isolated large amplitude periodic motions of towed rigid wheels
Nonlinear Dynamics 52, 27-34 (2008)
54. Low, J. and **Hogan, S.J.**
Standard and nonstandard nematic electrohydrodynamic convection in the presence of asymmetric AC electric fields
Phys Rev E 78, 041706 (2008)
55. Fossas, E., **Hogan, S.J.** and Seara, T.M.
Two-parameter bifurcation curves in power electronic converters.
Int. J. Bifurcation & Chaos 19, 349-357 (2009)
56. Polynikis, A., Di Bernardo, M. and **Hogan, S.J.**
Synchronizability of coupled piecewise linear maps
Chaos, Solitons and Fractals 41, 1353–1367 (2009)
57. Kyrychko, Y.N., Blyuss, K. and **Hogan, S.J.**
Control of spatio-temporal patterns in the Gray-Scott model
Chaos 19, 043126 (2009)
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58. Polynikis, A., **Hogan, S.J.** and Di Bernardo, M.
Comparing different ODE modelling approaches for gene regulatory networks
J. Theoretical Biology 261, 511-530 (2009)
Selected for Faculty of 1000 Biology
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On the use of delay equations in engineering applications
J. Vibration and Control 16, 943-960 (2010)
Most-Read Articles J. Vibration and Control December 2010
60. Sieber, J., Kowalczyk, P., **Hogan, S.J.** and Di Bernardo, M.
Dynamics of symmetric dynamical systems with delayed switching
J. Vibration and Control 16, 1111-1140 (2010)
61. Insperger, T., Wahi, P., Colombo, A., Stépán, G., Di Bernardo, M. and **Hogan, S. J.**
Full characterization of act-and-wait control for first order unstable lag processes
J. Vibration and Control 16, 1209-1233 (2010)
62. Guardia, M., **Hogan, S.J.** and Seara, T.M.
An analytical approach to codimension-2 sliding bifurcations in the dry friction oscillator
SIAM Application of Dynamical Systems 9, 769-798 (2010)
63. Di Bernardo, M. and **Hogan, S.J.**
Discontinuity-induced bifurcations of piecewise smooth dynamical systems
Phil. Trans. Roy. Soc. 368, 4915-4935 (2010)
64. Jeffrey, M.R. and **Hogan, S.J.**
The geometry of generic sliding bifurcations
SIAM Review (to appear 2011)
65. Polynikis, A., Cuccato, G., Criscuolo, S., **Hogan, S.J.**, Di Bernardo, M. and Di Bernardo, D.
Design and construction of a versatile synthetic network for bistable gene expression in mammalian systems.
J. Computational Biol. 18, 195-203 (2011)