

## List of Publications:

1. P.V. Gordon, F. Nazarov, Y. Peres, *A basic homogenization problem for the  $p$ -Laplacian in  $\mathbb{R}^d$  perforated along a sphere:  $L^\infty$  estimates*, Potential Analysis, (2024), published online: doi.org/10.1007/s11118-024-10126-8
2. A. Matson, M.C. Hicks, U.G. Hegde, P.V. Gordon, *An elementary model for an advancing autoignition front in laminar reactive co-flow jets injected into supercritical water*, J. of Supercritical Fluids, **207** (2024), 106210: doi.org/10.1016/j.supflu.2024.106210
3. A. Matson, C.-M. Brauner, P.V. Gordon, *Uniqueness of traveling fronts in premixed flames with stepwise ignition-temperature kinetics and fractional reaction order*, Physica D, **454** (2023), 133859: doi.org/10.1016/j.physd.2023.133859
4. P.V. Gordon, L. Kagan, G. Sivashinsky, *Modeling of thermonuclear fusion flames: parametric transition to detonation*, Combust. Sci. and Technol., **195**(15) (2023), 3615-3626 : doi.org/10.1080/00102202.2022.2041609
5. L. Kagan, P.V. Gordon, G. Sivashinsky, *Viscous dissipation as a mechanism for spatiotemporal chaos in Rayleigh-Benard convection between poorly conducting boundaries at infinite Prandtl number*, Phys. Rev. Fluids, **7** (2022), 113501: doi.org/10.1103/PhysRevFluids.7.113501
6. L. Kagan, P.V. Gordon, G. Sivashinsky, *A reduced model for a self-accelerating expanding flame subjected to the Darrieus-Landau and Rayleigh-Taylor instabilities: Transition to detonation*, Combustion & Flame, **245** (2022), 112333: doi.org/10.1016/j.combustflame.2022.112333
7. P.V. Gordon, L. Kagan, G. Sivashinsky, *Parametric transition from deflagration to detonation in stellar medium*, Phys. Rev. E, **103** (2021), 033106: doi.org/10.1103/PhysRevE.103.033106
8. P.V. Gordon, U.G. Hegde, M.C. Hicks, *On traveling front of ignition in co-flow laminar reactive jets*, SIAM J. Appl. Math., **81**(1) (2021), 47-59: doi.org/10.1137/20M1357603
9. P.V. Gordon, V. Moroz, F. Nazarov, *Gelfand-type problem for turbulent jets*, J. Differential Equations, **269**(7) (2020), 5959-5996: doi.org/10.1016/j.jde.2020.04.026
10. P.V. Gordon, L. Kagan, G. Sivashinsky, *Parametric transition from deflagration to detonation revisited: Spherical geometry*, Combustion & Flame, **219** (2020), 405-415: doi.org/10.1016/j.combustflame.2020.05.015
11. P.V. Gordon, L. Kagan, G. Sivashinsky, *Parametric transition from deflagration to detonation revisited: Planar geometry*, Combustion & Flame, **211** (2020), 465-476: doi.org/10.1016/j.combustflame.2019.10.011
12. I. Brailovsky, L. Kagan, P. Gordon, G. Sivashinsky, *An elementary model for fast detonations in tubular charges*, Combustion Theory and Modelling, **23**(4) (2019), 573-591: doi.org/10.1080/13647830.2019.1566573
13. P.V. Gordon, U.G. Hegde, M.C. Hicks, *An elementary model for autoignition of free round turbulent jets*, SIAM J. Appl. Math., **78**(2) (2018), 705-718: doi.org/10.1137/17M1147780  
[SIAM Research Nugget about this paper]
14. N. Kilker, D. Golovaty, P.V. Gordon, L. Kagan, G.I. Sivashinsky, *Strongly nonlinear asymptotic model of cellular instabilities in premixed flames with stepwise ignition temperature kinetics*, SIAM J. Appl. Math., **77**(4) (2017), 1136-1156: doi.org/10.1137/16M110890X
15. P.V. Gordon, T.I. Hill, G.I. Sivashinsky, *Complete blow up for a parabolic system arising in a theory of thermal explosion in porous media*, Communications in Math. Sciences, **15**(2) (2017), 565-576: dx.doi.org/10.4310/CMS.2017.v15.n2.a12
16. C.-M. Brauner, P.V. Gordon, W. Zhang, *An ignition-temperature model with two free interfaces in premixed flames*, Combustion Theory and Modelling, **20**(6) (2016), 976-994: doi.org/10.1080/13647830.2016.1220625

17. P.V. Gordon, U.G. Hegde, M.C. Hicks, M.J. Kulis, *On autoignition of co-flow laminar jets*, SIAM J. Appl. Math., **76**(5) (2016), 2081-2098: doi.org/10.1137/16M1073017
18. P.V. Gordon, C.B. Muratov, *Eventual self-similarity of solutions for the diffusion equation with nonlinear absorption and a point source*, SIAM J. Math. Anal., **47**(4) (2015), 2903-2916: doi.org/10.1137/140974997
19. P.V. Gordon, D.J. Gotti, U.G. Hegde, M.C. Hicks, M.J. Kulis, G.I. Sivashinsky, *An elementary model for autoignition of laminar jets*, Proceedings of the Royal Society A, **471** (2015), 20150059: doi.org/10.1098/rspa.2015.0059
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22. P.V. Gordon, V. Moroz, *Gelfand-type problem for two-phase porous media*, Proceedings of the Royal Society A, **470** (2014), 20130573: doi.org/10.1098/rspa.2013.0573
23. P.V. Gordon, E. Ko, R. Shivaaji, *Multiplicity and uniqueness of positive solutions for elliptic equations with nonlinear boundary conditions arising in a theory of thermal explosion*, Nonlinear Analysis: Real World Applications, **15** (2014), 51-57: doi.org/10.1016/j.nonrwa.2013.05.005
24. P. V. Gordon, C. B. Muratov, M. Novaga, *Multiplicity of supercritical fronts for reaction-diffusion equations in cylinders*, Calc. Var. & PDE's **47**(3) (2013), 683-709: doi.org/10.1007/s00526-012-0532-1
25. P.V. Gordon, C.B. Muratov, S.Y. Shvartsman, *Local accumulation times for source, diffusion and degradation models in two and three dimensions*, J. Chem. Phys. **138**(10) (2013), 104121: doi.org/10.1063/1.4793985
26. P.V. Gordon, G.S. Weiss, *Convective combustion in porous media: singular limit of high activation energy*, Nonlinearity **26**(1) (2013), 53-63: DOI 10.1088/0951-7715/26/1/53
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35. A. Babchin, I. Brailovsky, P. Gordon, G. Sivashinsky *Fingering instability in immiscible displacement*, Phys. Rev. E, **77** (2008), 026301: doi.org/10.1103/PhysRevE.77.026301

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