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▬ Publications

Peer Reviewed Papers:

24. **M. Dai.** *Regularity problem for the nematic LCD system with Q-tensor in $\mathbb{R}^3$.* SIAM Journal on Mathematical Analysis, to appear.

23. **M. Dai.** *Regularity criterion for the 3D Hall-magneto-hydrodynamics.* Journal of Differential Equations, 261: 573–591, 2016.

22. **M. Dai.** *Stability of solutions to the dissipative quasi-geostrophic equations.* Nonlinearity, 28: 4227–4248, 2015.

21. **M. Dai.** *Regularity criterion and energy conservation for the supercritical quasi-geostrophic equation.* Journal of Mathematical Fluid Mechanics, DOI:10.1007/s00021-017-0320-y, 2017.

20. **M. Dai.** *Existence of regular solutions to an Ericksen-Leslie model of liquid crystal system.* Communications in Mathematical Sciences, Vol. 13 (7): 1711–1740, 2014.

19. **M. Dai and M. E. Schonbek.** *Asymptotic behavior of solutions to the liquid crystal systems in $H^m(\mathbb{R}^3)$.* SIAM Journal on Mathematical Analysis. Vol. 46, No. 5:3131–3150, 2014.

18. **M. Dai, J. Qing and M. E. Schonbek.** *Asymptotic behavior of solutions to liquid crystal systems in $\mathbb{R}^3$.* Communications in Partial Differential Equations. Vol. 37, No. 12: 2138–2164, 2012.

17. **A. Cheskidov and M. Dai.** *Norm inflation for generalized Magneto-hydrodynamic system.* Nonlinearity, 28: 129–142, 2015.

16. **M. Dai, E. Feireisl, E. Rocca, G. Schimperna, and M. E. Schonbek.** *On asymptotic isotropy for a hydrodynamic model of liquid crystals.* Asymptotic Analysis 97 (3-4): 189–210, 2016.

15. **M. Dai, J. Qing and M. E. Schonbek.** *Regularity of solutions to the liquid crystals systems in $\mathbb{R}^2$ and $\mathbb{R}^3$.* Nonlinearity, 25: 513–532, 2012.

14. **A. Cheskidov and M. Dai.** *Norm inflation for generalized Navier-Stokes equations.* Indiana University Mathematics Journal, Vol. 63, No. 3 : 869–884, 2014.

13. **M. Dai and J. Bona.** *Norm-inflation results for the BBM equation.* Journal of Mathematical Analysis and Applications, Vol. 446: 879–885, 2017.

12. **A. Cheskidov and M. Dai.** *The existence of a global attractor for the forced critical surface quasi-geostrophic equation in L^2.* Journal of Mathematical Fluid Mechanics, DOI: 10.1007/s00021-017-0324-7, 2017.

11. **M. Dai, E. Feireisl, E. Rocca, G. Schimperna, and M. E. Schonbek.** *Analysis of a diffuse interface model of multispecies tumor growth.* Nonlinearity, Vol. 30: 1639–1658, 2017.

10. **M. Dai, J. Qing and M. E. Schonbek.** *Norm inflation for incompressible Magneto-hydrodynamic system in $\dot{B}_\infty^{-1,\infty}$.* Advances in Differential Equations, Vol. 16, No. 7-8: 725–746, 2011.

9. **A. Cheskidov and M. Dai.** *Kolmogorov's dissipation number and the number of degrees of freedom for the 3D Navier-Stokes equations.* Proceedings of the Royal Society of Edinburg, Section A, to appear.

8. **A. Cheskidov, M. Dai and L. Kavlie.** *Determining modes for the 3D Navier-Stokes equations.* Physica D: Nonlinear Phenomena, to appear.

7. **A. Cheskidov and M. Dai.** *Determining modes for the surface quasi-geostrophic equation.* Physica D: Nonlinear Phenomena, to appear.

6. **A. Cheskidov and M. Dai.** *Ill-posedness of the Navier-Stokes and magneto-hydrodynamic systems.* Advances in Differential Equations, to appear.

Papers Under Review:

5. **M. Dai.** *Local well-posedness of the Hall-MHD system in $H^s(\mathbb{R}^n)$ with $s > \frac{n}{2}$.* arXiv:1709.02347, 2017.

4. **M. Dai.** *Local existence for the MHD system in optimal Sobolev space.* arXiv:1707.07754, 2017.

3. **M. Dai and H. Liu.** *Long time behavior of solutions to the 3D Hall-magneto-hydrodynamics system with one diffusion.* arXiv:1705.02647, 2017.

2. **A. Cheskidov and M. Dai.** *On the determining wavenumber for the nonautonomous subcritical SQG equation.* arXiv:1508.07943, 2015.

1. **A. Cheskidov and M. Dai.** *Regularity criteria for the 3D Navier-Stokes and MHD equations.* arXiv:1507.06611, 2015.