

MATHEMATICAL PROBLEMS IN FLUID DYNAMICS, PART 2

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- [1] T. ALAZARD and J.-M. DELORT, *Sobolev estimates for two dimensional gravity water waves*, Astérisque **374**, Société Mathématique de France, Pisa, 2015, ISBN 978-2-85629-821-3. MR 3460636. Zbl 1360.35002. <https://smf.emath.fr/publications/estimations-sobolev-pour-les-ondes-de-gravite-en-dimension-deux>.
- [2] H. BAHOURI, J.-Y. CHEMIN, and R. DANCHIN, *Fourier analysis and nonlinear partial differential equations*, Grundlehren der Mathematischen Wissenschaften **343**, Springer, Heidelberg, 2011, ISBN 978-3-642-16829-1. MR 2768550. Zbl 1227.35004. doi: 10.1007/978-3-642-16830-7.
- [3] J. BEDROSSIAN and V. VICOL, *The mathematical analysis of the incompressible Euler and Navier–Stokes equations: an introduction*, Graduate Studies in Mathematics **225**, American Mathematical Society, Providence, RI, 2022, ISBN 978-1-4704-7049-4. MR 4475666. Zbl 7606392. doi: 10.1090/gsm/225.
- [4] S. BENZONI-GAVAGE and D. SERRE, *Multidimensional hyperbolic partial differential equations: First-order systems and applications*, Oxford University Press, Oxford, 2007, ISBN 978-0-19-921123-4; 0-19-921123-X. MR 2284507. Zbl 1113.35001. doi: 10.1093/acprof:oso/9780199211234.001.0001.
- [5] J.-Y. CHEMIN, B. DESJARDINS, I. GALLAGHER, and E. GRENIER, *Mathematical geophysics: An introduction to rotating fluids and the Navier–Stokes equations*, Oxford Lecture Series in Mathematics and its Applications **32**, Oxford University Press, Oxford, 2006, ISBN 978-0-19-857133-9; 0-19-857133-X. MR 2228849. Zbl 1205.86001. doi: 10.1093/oso/9780198571339.001.0001.
- [6] L. HÖRMANDER, *Lectures on nonlinear hyperbolic differential equations*, Mathématiques & Applications **26**, Springer, Berlin, 1997, ISBN 3-540-62921-1. MR 1466700. Zbl 0881.35001.
- [7] A. JÜNGEL, *Entropy methods for diffusive partial differential equations*, Springer, Switzerland, 2016, ISBN 978-3-319-34218-4; 978-3-319-34219-1. MR 3497125. Zbl 1361.35002. doi: 10.1007/978-3-319-34219-1.
- [8] B. KALTENBACHER, I. KUKAVICA, I. LASIECKA, R. TRIGGIANI, A. TUFFAHA, and J. T. WEBSTER, *Mathematical theory of evolutionary fluid-flow structure interactions*, Oberwolfach Seminars **48**, Birkhäuser, Cham, 2018, ISBN 978-3-319-92782-4; 978-3-319-92783-1. MR 3822723. Zbl 1403.35005. doi: 10.1007/978-3-319-92783-1.
- [9] D. LANNES, *The water waves problem: Mathematical analysis and asymptotics*, Mathematical Surveys and Monographs **188**, American Mathematical Society, Providence, RI, 2013, ISBN 978-0-8218-9470-5. MR 3060183. Zbl 1410.35003. doi: 10.1090/surv/188.
- [10] P. G. LEMARIÉ-RIEUSSET, *The Navier–Stokes problem in the 21st century*, CRC Press, Boca Raton, FL, 2016, ISBN 978-1-4665-6621-7. MR 3469428. Zbl 1342.76029. doi: 10.1201/b19556.
- [11] P.-L. LIONS, *Mathematical topics in fluid mechanics, 1: Incompressible models*, Oxford Lecture Series in Mathematics and its Applications **3**, Oxford University Press, New York, NY, 1996, ISBN 0-19-851487-5. MR 1422251. Zbl 0866.76002.
- [12] A. J. MAJDA and A. L. BERTOZZI, *Vorticity and incompressible flow*, Cambridge Texts in Applied Mathematics **27**, Cambridge University Press, Cambridge, 2002, ISBN 0-521-63057-6; 0-521-63948-4. MR 1867882. Zbl 0983.76001. doi: 10.1017/CBO9780511613203.

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Bibliography by Daniel Tataru.

- [13] G. MÉTIVIER, *Para-differential calculus and applications to the Cauchy problem for nonlinear systems*, Centro di Ricerca Matematica Ennio De Giorgi (CRM) Series **5**, Edizioni della Normale, Pisa, 2008, ISBN 978-88-7642-329-1; 88-7642-329-1. MR 2418072. Zbl 1156.35002. <https://cel.archives-ouvertes.fr/cel-00287554>.
- [14] M. E. TAYLOR, *Pseudodifferential operators and nonlinear PDE*, Progress in Mathematics **100**, Birkhäuser, Boston, MA, 1991, ISBN 0-8176-3595-5. MR 1121019. Zbl 0746.35062. doi: 10.1007/978-1-4612-0431-2.