References[1]

Lecture 1: References [13], [3], and [15].

Lecture 2: References [13], [4], [6], [19], [17],, and [1].

Lecture 3: References [5], [2], [12], [16] [18] and [14].

Lecture 4: References [7], [8], [20], and [10].

Lecture 5: Reference [10], [11], and [9].

References

[1] Peter W. Bates and Christopher K. R. T. Jones. Invariant manifolds for semilinear partial differential equations. In *Dynamics reported, Vol. 2*, volume 2 of *Dynam. Report. Ser. Dynam. Systems Appl.*, pages 1–38. Wiley, Chichester, 1989.

[2] Matania Ben-Artzi. Global solutions of two-dimensional Navier-Stokes and Euler equations. *Arch. Rational Mech. Anal.*, 128(4):329–358, 1994.

[3] Jack Carr. *Applications of centre manifold theory*, volume 35 of *Applied Mathematical Sciences*. Springer-Verlag, New York, 1981.

[4] Xu-Yan Chen, Jack K. Hale, and Bin Tan. Invariant foliations for C^1 semigroups in Banach spaces. *J. Differential Equations*, 139(2):283–318, 1997.

[5] Charles R. Doering and J. D. Gibbon. *Applied analysis of the Navier-Stokes equations*. Cambridge Texts in Applied Mathematics. Cambridge University Press, Cambridge, 1995.

[6] Th. Gallay. A center-stable manifold theorem for differential equations in Banach spaces. *Comm. Math. Phys.*, 152(2):249–268, 1993.

[7] Thierry Gallay and C. Eugene Wayne. Invariant manifolds and the long-time asymptotics of the Navier-Stokes and vorticity equations on $\mathbf{R}^2$. *Arch. Ration. Mech. Anal.*, 163(3):209–258, 2002.

[8] Thierry Gallay and C. Eugene Wayne. Long-time asymptotics of the Navier-Stokes and vorticity equations on $\mathbb{R}^3$. *R. Soc. Lond. Philos. Trans. Ser. A Math. Phys. Eng. Sci.*, 360(1799):2155–2188, 2002. Recent developments in the mathematical theory of water waves (Oberwolfach, 2001).

[9] Thierry Gallay and C. Eugene Wayne. Global stability of vortex solutions of the two-dimensional Navier-Stokes equation. *Comm. Math. Phys.*, 255(1):97–129, 2005.

[10] Thierry Gallay and C. Eugene Wayne. Long-time asymptotics of the Navier-Stokes equation in $\mathbb{R}^2$ and $\mathbb{R}^3$ [Plenary lecture presented at the 76th Annual GAMM Conference, Luxembourg, 29 March–1 April 2005]. *ZAMM Z. Angew. Math. Mech.*, 86(4):256–267, 2006.

[1]To accompany the lectures of C.E. Wayne at JISC 2006; Barcelona

[11] Thierry Gallay and C. Eugene Wayne. Three-dimensional stability of Burgers vortices: the low Reynolds number case. *Phys. D*, 213(2):164–180, 2006.

[12] Yoshikazu Giga, Tetsuro Miyakawa, and Hirofumi Osada. Two-dimensional Navier-Stokes flow with measures as initial vorticity. *Arch. Rational Mech. Anal.*, 104(3):223–250, 1988.

[13] Daniel Henry. *Geometric theory of semilinear parabolic equations*, volume 840 of *Lecture Notes in Mathematics*. Springer-Verlag, Berlin, 1981.

[14] Tosio Kato. Strong L^p-solutions of the Navier-Stokes equation in $\mathbf{R}^m$, with applications to weak solutions. *Math. Z.*, 187(4):471–480, 1984.

[15] J. P. LaSalle. *The stability of dynamical systems*. Society for Industrial and Applied Mathematics, Philadelphia, Pa., 1976. With an appendix: "Limiting equations and stability of nonautonomous ordinary differential equations" by Z. Artstein, Regional Conference Series in Applied Mathematics.

[16] J. Leray. Etude de diverses équations intègrales non linèaires et de quelques problèmes que pose l'hydrodynamique. *J. Math. Pure Appl.*, 12:1–82, 1993.

[17] Alexander Mielke. Locally invariant manifolds for quasilinear parabolic equations. *Rocky Mountain J. Math.*, 21(2):707–714, 1991. Current directions in nonlinear partial differential equations (Provo, UT, 1987).

[18] Roger Temam. *Navier-Stokes equations*, volume 2 of *Studies in Mathematics and its Applications*. North-Holland Publishing Co., Amsterdam, third edition, 1984. Theory and numerical analysis, With an appendix by F. Thomasset.

[19] A. Vanderbauwhede and G. Iooss. Center manifold theory in infinite dimensions. In *Dynamics reported: expositions in dynamical systems*, volume 1 of *Dynam. Report. Expositions Dynam. Systems (N.S.)*, pages 125–163. Springer, Berlin, 1992.

[20] C. Eugene Wayne. Invariant manifolds for parabolic partial differential equations on unbounded domains. *Arch. Rational Mech. Anal.*, 138(3):279–306, 1997.