

湍流课程主要参考书目 (\*标注表示国内发行影印版或中译版)

1. **S. B. Pope, *Turbulent Flows*, Cambridge, 2000\* (本课程主要教材)**
2. P. A. Davison, *Turbulence: An Introduction for Scientists and Engineers*, Oxford, 2004
3. 张兆顺, 崔桂香, 许春晓, 湍流理论与模拟, 清华大学出版社, 2005

课程延伸阅读 (仅供从事或爱好湍流相关科研者参考)

流体力学教材

4. G. K. Batchelor, *An Introduction to Fluid Dynamics*, Cambridge, 2000\*
5. L. D. Landau and E. M. Lifshitz, *Fluid Mechanics*, 2nd Ed., Butterworth-Heinemann, 1987\*
6. 吴望一, 流体力学, 北京大学出版社, 1982
7. 周光炯等, 流体力学, 第二版, 高等教育出版社, 2002

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8. H. Tennekes and J. L. Lumley, *A First Course in Turbulence*, MIT, 1972
9. J. O. Hinze, *Turbulence*, McGraw Hill, 1975
10. P. A. Durbin and B. A. Petterson Reif, *Statistical Theory and Modelling of Turbulent Flows*, Wiley, 2001
11. A. S. Monin and A. M. Yaglom, *Statistical Fluid Mechanics*, MIT, 1975
12. 是勋刚, 湍流, 天津大学出版社, 1994

统计理论与均匀各向同性湍流

13. U. Frisch, *Turbulence: The Legacy of A. N. Kolmogorov*, Cambridge, 1995\*
14. G. K. Batchelor, *The Theory of Homogeneous Turbulence*, Cambridge, 1953
15. D. C. Leslie, *Developments in the Theory of Turbulence*, Oxford, 1973
16. W. D. McComb, *The Physics of Fluid Turbulence*, Oxford, 1992

剪切湍流与壁湍流

17. H. Schlichting and K. Gersten, *Boundary Layer Theory*, 8th Ed., Springer, 2000
18. A. A. Townsend, *The Structure of Turbulent Shear Flow*, Cambridge, 1976

非线性动力学

19. D. W. Jordan and P. Smith, *Nonlinear Ordinary Differential Equations: An Introduction for Scientists and Engineers*, 4th Ed., Oxford, 2007
20. T. Bohr *et al.*, *Dynamical Systems Approach to Turbulence*, Cambridge, 1998\*
21. J. M. T. Thompson, H. B. Stewart, *Nonlinear Dynamics and Chaos*, 2nd Ed., Wiley, 2002
22. F. David Peat and J. Briggs, *Turbulent Mirror*, Harper Perennial, 1990

## 涡动力学

23. J. Z. Wu, H. Y. Ma and M. D. Zhou, *Vorticity and Vortex Dynamics*, Springer-Verlag, 2006
24. P. G. Saffman, *Vortex dynamics*, Cambridge, 1992
25. A. J. Chorin, *Vorticity and Turbulence*, Springer-Verlag, 1994\*
26. 童秉刚, 尹协远, 朱克勤, 涡运动理论, 第二版, 中国科学技术大学出版社, 2009

## 数值模拟

27. J. D. Anderson, *Computational Fluid Dynamics*, McGraw-Hill, 1995\*
28. J. H. Ferziger and M. Peric, *Computational Methods for Fluid Dynamics*, 3rd Ed., Springer, 2002\*
29. H. Lomax *et al.*, *Fundamentals of Computational Fluid Dynamics*, Springer, 2003
30. P. Sagaut, *Large Eddy Simulation for Incompressible Flows: An Introduction*, 3rd Ed., Springer, 2005
31. D. C. Wilcox, *Turbulence Modeling for CFD*, DCW Industries, 1993
32. C. B. Moler, *Numerical Computing with MATLAB*, SIAM, 2004\*

## 概率统计与随机过程

33. A. Papoulis and S. U. Pillai, *Probability, Random Variables and Stochastic Processes*, 4th Ed., McGraw-Hill, 2002\*
34. W. Gardiner, *Handbook of Stochastic Methods*, Springer-Verlag, 1985

## 信号处理

35. 郑君里等, 信号与系统, 第三版, 高等教育出版社, 2011
36. A. Boggess and F. J. Narcowich, *A First Course in Wavelets with Fourier Analysis*, Wiley, 2001\*
37. S. Mallat, *A Wavelet Tour of Signal Processing: The Sparse Way*, 3rd Ed., 2008\*

## 人物传记

38. P. A. Davison *et al.*, *A Voyage Through Turbulence*, Cambridge, 2011
39. G. K. Batchelor, *The Life and Legacy of G. I. Taylor*, Cambridge, 2008
40. T. von Karman, *The Wind and Beyond: Theodore von Karman, Pioneer in Aviation and Pathfinder in Space*, Little, Brown and Company, 1967

## 相关学术期刊

*Annual Review of Fluid Mechanics, Journal of Fluid Mechanics, Physics of Fluids, Physical Review Letters, Physical Review E, Journal of Turbulence*

## 相关软件

MATLAB, ANSYS Fluent, Mathematica, LaTeX