

CONTENTS

	Page
1. TRANSITION TO TURBULENCE	
N. GILBERT, L. KLEISER: Subcritical Transition to Turbulence in Channel Flow	1
T. HERBERT: Vortical Mechanisms in Shear Flow Transition	19
2. SUBGRID-SCALE MODELS AND BASIC CONCEPTS	
B. AUPOIX: Subgrid Scale Models for Homogeneous Anisotropic Turbulence .	37
W. D. McCOMB: Application of Renormalization Group (RG) Methods to the Subgrid Modelling Problem.	67
E. LEVICH: Helical Fluctuations, Fractal Dimensions and Path Integral in the Theory of Turbulence	82
3. LARGE EDDY SIMULATIONS OF WALL-BOUNDED SHEAR FLOWS	
S. GAVRILAKIS, H. M. TSAI, P. R. VOKE, D. C. LESLIE: Large-Eddy Simulation of Low Reynolds Number Channel Flow by Spectral and Finite Difference Methods	105
K. HORIUTI, A. YOSHIKAWA: Large Eddy Simulation of Turbulent Channel Flow by 1-Equation Model	119
T. KOBAYASHI, M. KANO: Numerical Prediction of Turbulent Plane Couette Flow by Large Eddy Simulation	135
D. LAURENCE: Advective Formulation of Large Eddy Simulation for Engineering Type Flows	147
L. SCHMITT, K. RICHTER, R. FRIEDRICH: Large-Eddy Simulation of Turbulent Boundary Layer and Channel Flow at High Reynolds Number	161
Short Contributions:	
J. KIM: Numerical Investigation of a Vortical Structure in a Wall-Bounded Shear Flow	177

P. MOIN: Recent Results on the Structure of Turbulent Shear Flows using Simulation Databases	181
4. DIRECT AND LARGE EDDY SIMULATIONS OF MIXED SHEAR AND BUOYANT FLOWS	
T. M. EIDSON, M. Y. HUSSAINI, T. A. ZANG: Simulation of the Turbulent Rayleigh-Benard Problem using a Spectral/Finite Difference Technique . .	188
G. GRÖTZBACH: Application of the TURBIT-3 Subgrid Scale Model to Scales Between Large Eddy and Direct Simulations	210
K. KUWAHARA, S. SHIRAYAMA: Direct Simulation of High-Reynolds-Number Flows by Finite-Difference Methods	227
U. SCHUMANN, S. E. ELGHOBASHI, T. GERZ: Direct Simulation of Stably Stratified Turbulent Homogeneous Shear Flows	245
Short Contribution:	
R. W. METCALFE, S. MENON, J.J. RILEY: The Effect of Coherent Modes on the Evolution of a Turbulent Mixing Layer	265
5. CONVECTIVE OR STABLE ATMOSPHERIC BOUNDARY LAYERS	
D. J. CARRUTHERS, J. C. R. HUNT, C. J. TURFUS: Turbulent Flow near Density Inversion Layers	271
C.-H. MOENG: A Large Eddy Simulation Model for the Stratus-Topped Boundary Layer	291
F. T. M. NIEUWSTADT, R. A. BROST, T. L. van STIJN: Decay of Convective Turbulence, a Large Eddy Simulation	304
6. SUMMARIZING STATEMENTS ON RESULTS, TRENDS AND RECOMMENDATIONS	318
List of Participants	336
List of Authors	340