

CONTENTS

List of Contributors	xiii
<u>1. Basic studies and modelling of turbulence and diffusion in stratified flows</u>	
Diffusion and decay in stably-stratified turbulent flows by R.E. Britter	3
The inhibition of vertical turbulent scale by stable stratification by F.K. Browand and E.J. Hopfinger	15
Turbulence and wave motions near an interface between a turbulent region and a stably stratified layer by D.J. Carruthers and J.C.R. Hunt	29
Mixing of gravity currents in turbulent surroundings: laboratory studies and modelling implications by N.H. Thomas and J.E. Simpson	61
A vivid mechanical picture of turbulence by R.S. Scorer	97
Calculation of stably stratified shear-layer flows with a buoyancy - extended K- ϵ turbulence model by W. Rodi	111
ABSTRACTS	
Understanding and modelling turbulence in stably stratified flows by considering displacements and mixing of fluid elements by J.C.R. Hunt	141
The turbulence modelling of variable density flows - A mixed-weighted decomposition by B.E. Launder	145

2. Turbulent stratified flows in the environment

A model for the stationary, stable boundary layer by
F.T.M. Nieuwstadt 149

Parameterization of the low frequency part of spectra
of horizontal velocity components in the stable surface
boundary layer by S.E. Larsen, H.R. Olesen and
J. Højstrup 181

Modelling the development of large eddies in the stable
atmospheric boundary layer by J.C. King 205

Stratification and internal waves in the western Irish
Sea by M.F. Lavin and T.J. Sherwin 225

The benthic boundary layer by K.J. Richards 237

ABSTRACTS

Turbulence and waves in stable layers by S.J. Caughey 253

Calculation of the development of three-dimensional
wake flows in a stably stratified environment by
J. McGuirk, A. Ghobadian, A.J.H. Goddard and A.D. Gosman 255

3. Dispersion in stratified flow in the environment

Towards a box model of all stages of heavy gas cloud
dispersion by P.C. Chatwin 259

Multiple smoke flume trials - The Chemical Defence
Establishment by C.D. Jones and D.J. Ride 293

Vertical heat transport in a cooling water plume by
J.H. Pickles and I.R. Rodgers 297

Intense mixing periods in an estuary by R.E. Lewis 315