CONTENTS

Contents iii
Author Index vii
Welcome Addresses ix
Summary of the Fifth International Winds Workshop xv

Report of the Chairperson of Session I: D. Hinsman
Current Systems to Derive Atmospheric Motion Vectors (AMVs) 1

Report of the Chairperson of Session II: M. Tokuno
Verification and Objective Quality Analysis 3

Report of the Chairperson of Session III: J. Le Marshall
Assimilation and Impact of AMVs in NWP 5

Report of the Chairperson of Session IV: R.C. Bhatia
New Retrieval Systems 7

Report of the Chairperson of Session V: J. Xu
New Techniques 9

Report of the Chairperson of Session VI: J. Schmetz
New Space Borne Systems 11

Reports of the Working Groups
Working Group on Methods (C. Velden) 13
Working Group on Utilisation (B. Soden) 15
Working Group on Verification and Quality Indicators (K. Holmlund) 17

LECTURES

SESSION I
CURRENT SYSTEMS TO DERIVE ATMOSPHERIC MOTION VECTORS (AMVs)

M. Tokuno
Status of GMS-5 Wind Products and MTSAT Wind Products Plans at MSC/JMA 19

J. Daniels, C. Velden, W. Bresky and A. Irving
Status and Development of Operational GOES Wind Products 27

M. Rattenborg *(presented by S.S. Elliott)*
Operational Meteosat Wind Products Towards MSG 37

J. Le Marshall, N. Pescod, R. Seecamp, A. Rea, C. Tingwell, G.Ellis and H. Shi
Recent Advances in the Generation and Assimilation of High Spatial and Temporal Resolution Satellite Winds 47

J. Xu, K. Holmlund, Q. Zhang and J. Schmetz
A Comparison of two Atmospheric Motion Vector Derivation Schemes: The EUMETSAT MSG Prototyping Scheme and the NSMC Scheme 57

SESSION II
VERIFICATION AND OBJECTIVE QUALITY ANALYSIS

F. Lalaurette and A. Garcia-Mendez
Monitoring Satellite Winds at ECMWF 65

K. Holmlund, C.S. Velden and M. Rohn
Improved Quality Estimates of Atmospheric Motion Vectors Utilising the EUMETSAT Quality Indicators and the UW/CIMSS Auto-Editor 73

S.S. Elliott
Parallel Quality Control of EUMETSAT Wind Products, with and without the use of Forecast Wind Fields 81

P. Butterworth, F. Lalaurette, B.J. Conway and A. Garcia Mendez
(presented by F. Lalaurette)
The NWP SAF Integrated Satellite Wind Monitoring Report 89

A. Stoffelen, M. Portabella and A. Voorrips
Towards the Assimilation of Quikscat Winds 95

P.N. Khanna, R.C. Bhatia and D. Singh
Recent Improvements in the Quality of INSAT Derived CMV's and their use in Numerical Model Forecast 103

G.G. Campbell and K. Holmlund
Geometric Clouds Heights from Meteosat and AVHRR 109

SESSION III
ASSIMILATION AND IMPACT OF AMVS IN NWP

T.H. Zapotocny, J.P. Nelson, J.A. Jung and W.P. Menzel *(presented by W.P. Menzel)*
Impact of Satellite Temperature, Moisture, and Wind Observations in the eta Data Assimilation System over three Seasons 117

B.J. Soden and C.S. Velden
The Impact of Satellite-Derived Winds on GFDL Hurricane Model Forecasts 129

R.C. Bhatia, P.N. Khanna, K. Prasad, D. Singh and M. Das Gupta
Use of Meteosat-5 Derived Winds for Analysis of two Tropical Cyclones Affecting Gujarat Coast on 20 May, 1999 and Orissa Coast on 29 October, 1999 135

J.L. Evans
Assimilation of Satellite-Derived Winds into the Community Hurricane Modeling System (CHUMS) at Penn State 143

P. Butterworth and N.B. Ingleby *(presented by B. Ingleby)*
Recent Developments in the use of Satellite Winds at the UK Met. Office 151

S.R.H. Rizvi, M. Das Gupta, A.K. Mitra, V.S. Prasad and H.V. Gupta
Assimilation of Conventional and Satellite Wind Observations in the Global Data Assimilation System at NCMRWF 161

X. Su, J. Derber, S. Lord and C.S. Velden (Abstract only)
Toward Improved use of GOES Satellite-Derived Winds at the NCEP Environmental Modelling Center 167

Y. Tahara
The Preliminary Study of the Impact of Quikscat/Seawinds Ocean Surface Wind Data to The JMA Global Model 169

G. Kelly and M. Rohn
The Use of the MPEF Quality Indicator 177

SESSION IV
NEW RETRIEVAL SYSTEMS

C.S. Velden
Exploratory Satellite-Derived Winds Research at CIMSS 187

T. Olander, C. Velden and C. Spinoso
Creation of a Platform-Independent Version of the UW-CIMSS Geostationary, High-Density Wind Derivation Algorithm 195

K. Holmlund
The Atmospheric Motion Vector Retrieval Scheme for Meteosat Second Generation 201

J.M. Fernández
Developments for a High-Resolution Wind Product from the HRV Visible Channel of the Meteosat Second Generation 209

Q. Zhang and J. Xu
Atmospheric Motion Vector (AMV) Analysis Tools in the NSMC AMV Derivation Scheme 215

SESSION V
NEW TECHNIQUES

G.G. Campbell and F.-M. Breon
Polar Orbiter: Stereo Heights and Cloud Motions 219

J. Schmetz, K. Holmlund, H.P. Roesli and V. Levizzani
On the use of Rapid Scans 227

G. Dew and K. Holmlund *(presented by K. Holmlund)*
Investigations of Cross-Correlation and Euclidean Distance Target Matching Techniques in the MPEF Environment 235

A. Szantai, F. Désalmand, M. Desbois, P. Lecomte, P. Perez, S. Zimeras and P. Bouthemy
Tracking Low-Level Clouds over Land on Meteosat Images 245

SESSION VI
NEW SPACE BORNE SYSTEMS

W. Smith, W. Harrison, D. Hinton, V. Parsons, A. Larar, H. Revercomb, A. Huang, C. Velden, P. Menzel, R. Petersen, G. Bingham and R. Huppi
GIFTS – A System for Wind Profiling from Geostationary Satellites 253

C.B. Hasager
Wind Energy Mapping Using Synthetic Aperture Radar 259

P. Ingmann and J. Fuchs
The Atmospheric Dynamics Mission 267

G.J. Marseille, A. Stoffelen, F. Bouttier, C. Cardinali, S. de Haan and D. Vasiljevic *(presented by A. Stoffelen)*
Impact Assessment of a Doppler Wind Lidar in Space on Atmospheric Analyses and Numerical Weather Prediction 275

J.F.W. Purdom
Combined Capabilities of Data from Active and Passive Satellite Instruments to Define Atmospheric Motion 283

List of Participants 291