39th International Liège Colloquium on Ocean Dynamics
and
3rd Warnemünde Turbulence Days
(7-11 May 2007)
TURBULENCE RE-REVISITED

ORAL SESSIONS (Building B7 - "Hall Petits Amphithéatres")

Monday 7 May

09:00-09:50	Registration	
09:50-10:00	H. Burchard & J-M Beckers - welcome note	
Theme 1: Waves & turbulence		
10:00-10:40	Ardhuin F.	Mixing and wave energy dissipation in the presence of surface gravity waves: a review
10:40-11:05	Chu P. C. and Hsieh C.-P.	Wave-Turbulence Interaction for Multifractal Thermal Structure in the Western Philippine Sea Upper Layer
11:05-11:25	**Coffee Break**	
11:25-11:50	Bouruet-Aubertot P., van Haren H.	Inertial convective subrange in the bottom boundary layer of Rockall Channel
11:50-12:15	Zülicke C.	Air-sea fluxes and turbulence profiles in the presence of waves and films
12:15-12:40	Cuypers Y., Bouruet Aubertot P.	Numerical study of internal tide transformation and dissipation
12:40-14:00	**Break**	

14:00-14:25	Arneborg, Prandke and Liljebladh	Internal tides, bores and associated dissipation rates near the sill of a fjord basin
14:25-14:50	Green J.A.M., Simpson J.H., Legg S., Palmer M.R.	Internal waves at the Celtic Sea shelf break
14:50-15:15	Veron F., Melville W.K. and Lenain L.	Wave Modulated Turbulent Fields at the Ocean Surface and Related Air-Sea Fluxes
15:15-15:40	Gemmrich J.	On wave scales and wave-breaking induced turbulence
15:40-16:00	**Coffee Break**	
16:00-16:25	Jenkins A. D.	Incorporation of the effects of surface waves within the turbulence closure model GOTM
16:25-16:50	Bolaños R., Osuna P., Wolf J., Monbaliu J. and Sanchez-Arcilla A.	Development of a fully coupled wave-current interaction model. The POLCOMS-WAM system
16:50-17:15	Bidlot J.-R., Janssen P. A.E.M.	Latest research on how to further integrate the E.C.M.W.F. operational forecast models for air, sea and waves
17:15-17:20	**Introduction to Poster Session: Waves & turbulence**	
17:20-20:30	**Cocktail & Poster Session** **Waves & turbulence**	
Cocktails (jointly sponsored by Rockland Scientific International, ISW Wassermesstechnik and ALEC Electronics Co.)		
Bouruet-Aubertot P., Lelong P.		Breaking of inertia-gravity waves as inferred from direct numerical simulations
Cuypers Y., Vinçon-Leite B., Tassin B.		Degeneration of basin-scale seiches in a sub-alpine lake
Palmer M.,R., Simpson J., H., Rippeth T., P. and Sharples J.		Internal mixing processes in a seasonally stratified shelf sea

Tuesday 8 May

Theme 2: Turbulence in buoyant and dense plumes

09:00-09:10	Peeters H.	Introduction and context
09:10-9:40	Cenedese C. and Adduce C.	Mixing induced in a dense plume flowing down a sloping bottom in a rotating fluid: a new entrainment parameterization?
9:40-10:10	Muench, R., Padman, L., Gordon, A.L., Orsi, A.	Interfacial and benthic stresses in an outflow of dense Antarctic shelf water
10:10-10:30	**Coffee Break**	
10:30-11:00	Umlauf L., Arneborg L., Burchard H.	Transverse structure of turbulence and dynamics of rotating gravity currents in a channel
11:00-11:25	Burchard H., Janssen F., Bolding K., Umlauf L. and Rennau H.	Estimates of vertical mixing due to dense bottom currents in the Western Baltic Sea
11:25-11:50	Hall R, Huthnance J and Williams R	Diapycnal mixing in the Faroe-Shetland Channel from density overturns and current shear
11:50-12:15	Mohrholz V., Lass H.U. and Prandke H.	Estimation of TKE dissipation rate in an inflowing saline bottom plume using a PC-ADP
12:15-14:00	**Break**	
14:00-14:25	Jay D. A., Zaron E. D. and Pan J.	Plume Frontal Mixing, Internal Wave Generation and Vorticity: Upwelling vs. Downwelling Conditions
14:25-14:50	Nash J.D.	Turbulence and Mixing in the Columbia River Plume
14:50-15:15	Fraunié P.	Mixing processes in coastal river plumes. A high resolution approach.
15:15-15:35	**Coffee Break**	
15:35-16:00	Hallberg R, Legg S. and Jackson L. C.	Representing Gravity Current Entrainment in Global Ocean Climate Models
16:00-16:30	Özgökmen, T and P. Fischer	On the role of form drag in overflows
16:30-17:00	Thurnherr A.M.	Overflows on the Mid-Atlantic Ridge

17:00-17:05	**Introduction to Poster Session: Turbulence and the marine ecosystem**
Poster Session	
Turbulence in buoyant and dense plumes	
Troitskaya Yu., Sergeev D. , Sidorov D.and Ezhova E.	Laboratory modeling of excitation of internal waves by turbulent buoyant plumes discharged from a submerged wastewater outfall
Wåhlin A. K., Darelius E., Cenedese C. and G. Lane-Serff	Laboratory observations of increased plume entrainment in the presence of submarine canyons and ridges
Peters H.	The Structure of (Some) Gravity Currents
Darelius E., Wahlin A. and Rhines P.	Topographic steering of dense overflow plumes by canyons and ridges

Wednesday 9 May

Theme 3: Turbulence and the marine ecosystem

09:00-09:30	Seuront L., Schapira M., Doubell M. J., Pollet T., Paterson J. S. and Mitchell J. G.	Turbulence re-revisited: intermittency and marine ecosystems structure and function
9:30-10:00	van Duren L., Hendriks I., Bouma T., Folkard A., Johnson G., Morris E., Pope N., Verduin J. and Ysebaert T.	Flow interactions over plant- and animal assemblages: is the overall effect equal to the sum of the constituents?
10:00-10:25	Goodman L. and Robinson A. R.	On the theory of turbulent effects on biological physical interactions in the upper ocean
10:25-10:45	**Coffee Break**	
10:45-11:10	Goodman L., Wang Z.	The Role of Turbulence in Thin Plankton Layers
11:10-11:35	M. Moison, F. Schmitt, L. Seuront, S. Souissi, and J.S. Hwang.	Statistical properties of the calanoid copepod (*Centropages hamatus*) swimming behaviour under turbulent conditions
11:35-12:00	Yamazaki H. and Li H.	Microscale fluorescence structures in the ocean
12:00-14:00	**Break**	
14:00-14:25	Esposito S., Botte V., Iudicone D., Brunet C., Lacorata G. and Ribera d'Alcala M.	Characterization of phytoplankton photophysiological responses in the ocean mixed layer
14:25-14:50	Torres RJ, Barton ED, Largier J and Figueiras P	Turbulence and hydrographic observations in an estuary during the onset of a Harmful Algal Bloom
14:50-15:15	Rippeth TP, Green JAM, Palmer MR, Simpson JH, Wiles PJ	Vertical Mixing and biogeochemical fluxes in the Shelf Sea Seasonal Thermocline
15:15-15:35	**Coffee Break**	
15:35-16:00	McCardell G. and O'Donnell J.	Vertical Mixing Rates and Hypoxia in Western Long Island Sound
16:00-16:25	Botte V., Iudicone D., Ribera d'Alcala M., Pasquero C. and Provenzale A.	Using Computational Fluid Dynamics to study the interaction between shape and turbulence in the life of phytoplankton

16:25-16:30	**Introduction to Poster Session: Turbulence and the marine ecosystem**
Poster Session	
Turbulence and the marine ecosystem	
Marrase C, Peters F, Arin L, Sala MM, Malits A, Zoppini AM, Berdalet E, and Alcaraz M	The effect of turbulence in structuring microbial food webs under different scenarios of algal-bacterial competiton for nutrients
Peters F, Marrasé C, Guadayol O, Alcaraz M, Dolan J, Egge J, Havskum H, Larsen A, Stiansen JE, Thingstad F, and Vidal M	Interaction of nutrient load and turbulence in coastal systems
Shalovenkov N. and Ruabtzev Ju.	The formation of some features in spatial distribution of zoobenthos by hydrological condition in the coastal ecosystems

Thursday 10 May

Theme 4: Turbulence observations in the ocean

09:00-09:30	Moum J. N.	Such a Big Ocean … So Many Scales … Does it Really Make Sense to Measure Oceanic Turbulence?
9:30-10:00	van Haren H.	Using fast-sampling ADCP for observing vigorous processes above sloping ocean bottoms
10:00-10:20	Sherwin T J, Griffiths C R and Turrell W R	Intense mixing at the base of a constrained deep ocean cascade
10:20-10:40	Lavery A. C.	Imaging turbulent oceanic microstructure using high-frequency broadband acoustic scattering
10:40-11:00	**Coffee Break**	
11:00-11:20	Wiles P. J., Lorke A., Rippeth T. P. and Simpson J. H.	Turbulence in low energy bottom boundary layers
11:20-11:50	Simpson JH. , J.A.M. Green, T. Osborn, W.A.M. Nimmo-Smith, T.P. Rippeth	Turbulent dissipation across a tidal mixing front
11:50-12:10	Stansfield K., Palmer M., Rippeth T., Simpson J.	Turbulent mixing in the seasonally-stratified Western Irish Sea: a Thorpe Scale perspective
12:10-12:30	Kobayashi S., Hashimoto E., Nagao M., Fujiwara T. and Takasugi Y.	Tidal energy balance and turbulent energy dissipation in narrow strait
12:30-12:50	Souza A.	Turbulence and suspended sediment in estuaries and shelf seas
12:50-14:00	**Break**	
14:00-14:20	Carniel S., Kantha L., Prandke H., Book J.W., Chiggiato J., Rixen M., Lenartz F. and Sclavo M.	Measurements and modeling turbulent properties in the upper layers of the southern Adriatic Sea under various meteorological conditions during 2006
14:20-14:40	Dengler M., Schafstall J., and Bourlès B.	Upper ocean mixing processes in the equatorial Atlantic Ocean
14:40-15:10	Liu Z., Wei H.	Observations of the turbulent dissipation rate in the Yellow Sea
15:10-15:30	Lozovatsky I., Fernando H.J.S. and Shapovalov S.	Abyssal Mixing in the North Atlantic
15:30-15:50	**Coffee Break**	

15:50-16:10	Van Dam G. C. and Van Heijst G. J. F.	The energy balance of the North Sea
16:10-16:30	Schafstall J. and Dengler M.	A comparison of strength and mechanisms of diapycnal mixing during three cruises in the upwelling region off Mauritania
16:30-16:50	Nieves V., Turiel A., Isern-Fontanet J. and Garcia-Ladona E.	Mesoscale ocean dynamics using CVS in altimetric measurements of the Mediterranean Sea
16:50-17:10	Turiel A., Nieves V., Llebot C., Solé J., Garcia-Ladona E., Rio M.-H. and Larnicol G.	Geometrical multifractal signature in remote sensing data of the ocean and its connection with universal cascade processes
17:10-17:30	Schmitt FG, Huang YX, Lu ZM, Liu YL and Fernandez N	Analysis of turbulent fluctuations and its intermittency properties in the surf zone using Empirical Mode Decomposition
17:30-17:35	**Introduction to Poster Session: Turbulence observations in the ocean**	
Poster Session		
Turbulence observations in the ocean		
Dale A.C., Levine M.D. , Barth J.A. and Austin J.A.		Interleaving of a dye tracer in a shallow pycnocline: Evidence for the collapse of mixing patches?
Lueck R. & Wolk F.		Demonstration of the Coastal Microstructure Profiler VMP500
Inall M., Mercer D., Meldrum D., Provost P., and Prandke H.		Two Novel Autonomous Shear Micro-structure Profilers
Leung P. T., Prandke H., Anis A., Bondur V., Gibson C., Keeler N.		In-situ Measurements to Understand The Mechanism of submerged turbulence detections from optical satellites
Hua Li and Toshihiro Yazu		A profiler for bio-physical microstructure research - TurboMAP
Prandke H. and Holtsch K.		Microstructure-turbulence profiler series MSS
Planella, J., Roget, E. and Lozovatsky, I.		Intermittent turbulence in a littoral zone: Microstructure patches and lengthscales
19:30-23:30	**Colloquium dinner at "Château de Colonster" the bus colloquium will pick up participants at their hotels**	

Friday 11 May

Theme 5: Turbulence modelling in the ocean

09:00-09:30	Canuto V.M., et al.	Some new results in mixing modelling in the ocean
09:30-10:00	Eden C., Greatbatch R., Willebrand J. and Olbers D.	Turbulence models for mesoscale eddies
10:00-10:30	Sergey Danilov	2D and quasi-geostrophic turbulence: theory vs. observations
10:30-10:50	**Coffee Break**	
10:50-11:10	Carnevale G., Cenedese A., Espa S. and Mariani M.	Decaying 2D turbulence in rotating electromagnetically forced thin layer flows
11:10-11:30	Awad E., Toorman E., Widera P., Lacor Ch.	Large eddy simulations for quasi-2D turbulence in shallow flows
11:30-11:50	N.M. Colonna and E. Ferrero	Boundary layer simulations with a third-order closure model
11:50-12:20	V.M. Gryanik	Effects of coherent structures in convective turbulence: Why they are crucially important for higher order closure models ?
12:20-14:00	**Break**	
14:00-14:20	Wirth A. & Barnier B.	Mean Circulation and Structures of Tilted Ocean Deep Convection
14:20-14:40	Noh Y, Kang I. S., Raasch S. and Gryschka M.	LES of an ocean mixed layer under the stabilizing surface heat flux
14:40-15:10	Mironov D. et al.	Modelling the pressure terms in the second-moment equations
15:10-15:40	Galperin B., Sukoriansky S.	A quasi-normal scale elimination (QNSE) theory of stably stratified turbulence

15:40-16:00	**Coffee Break**	
16:00-16:20	Baumert H.Z. and Peters H.	On shear- and wave-generated turbulence in stratified fluids
16:20-16:40	Jackson L., Hallberg R. and Legg S.	A Parameterisation of Shear-Driven Turbulence for Ocean Climate Models
16:40-17:00	Lenartz F., Barth A., Carniel S., Kantha L., Rixen M., Vandenbulcke L. and Beckers J.-M.	Hindcasting turbulent properties in the upper layers of the southern Adriatic Sea by means of GOTM and the GHER 1-D model
17:00-17:20	Stips A.K., Liloverl M.-J. and Burchard H.	Limits of the k-e model to simulate shear enhanced eddy diffusivity below the surface mixed layer: the Gulf of Finland case study
17:20-17:40	Deleersnijder E., Burchard H., Dijkstra H. A. and Hanert E.	On the mathematical stability of the stratified flow models that include a sophisticated turbulence closure scheme
17:40-17:45	**Introduction to Poster Session: Turbulence modelling in the ocean**	
Poster Session		
Turbulence modelling in the ocean		
Blaise S and Deleersnijder E		A Finite Element Model Study of the Importance of the Advection of Turbulence Closure Variables
Toorman E, Lacor Ch, Heredia M and Widera P		Upscaling near-bottom sediment-turbulence interaction effects for large-scale 3D sediment transport modelling
Bennis A.-C.		A comparison of four vertical mixing schemes with an application to the Pacific Ocean
Hanert E.		On the use of the finite element method to simulate vertical mixing
Zaron E.D.		A New Look at Richardson Number Mixing Schemes for Equatorial Ocean Modeling
Papadimitrakis I. and Katsiropoulou A.		Effects of open boundary conditions on coastal circulation
Spivakovskaya D., A.W. Heemink and E. Deleersnijder		Lagrangian modelling of multi-dimensional advection-diffusion with space