

Programme - EO Summer School 2 – 2004

Alan O'Neill (DARC)
Overview of DA techniques
DA theory and algorithms (OI, 3D/4Dvar, Kalman Filter)
DA applications (Earth System)
DA variational methods
Elisabeth Gerard (Meteo France)
Assimilation of satellite data in operational meteorology
Satellite data information content, channel selection and density
Major advances foreseen in humidity profiling from space
Anthony Hollingsworth (ECMWF)
Global Earth System Monitoring using Space & in-situ data
Filtering & Projection of information from optimality principles of variational analysis
Henk Eskes (KNMI)
The role of data assimilation in atmospheric composition monitoring and forecasting
Stratospheric ozone: satellite observations, data assimilation and forecasts
Pierre Brasseur (LEGI)
Sequential Data Assimilation methods: theoretical aspects
Sequential Data Assimilation methods: implementation into primitive-equation models
On the Use of Satellite data for Operational Ocean Monitoring and Forecasting: the MERCATOR system
Johnny Johannessen (NERSC)
Overview of ocean and ice modelling
Satellite oceanography (SAR and optical)
Towards operational European capability for Marine Environment and Security
Detlef Stammer (University of Hamburg)
Remote sensing of Ocean Dynamics
The Ocean Inverse Problem
Practical Considerations of Ocean State Estimation
Nadia Pinardi (University of Ravenna)
The Mediterranean operational forecasting system: state of progress

Short term ocean forecasting and seasonal forecasting: forecast quality and accuracy
Seymour Laxon (UCL)
The cryosphere observed from space: Overview
Changes in ice mass balance past, present and future: A consensus view from models and observations
Mark Drinkwater (ESA/ESTEC)
ESA future missions
Scientific challenges associated with ice-drift products
Christiane Schmullius (University of Jena)
Overview of land surface parameters from Earth Observation
Land cover classification
Multi-Sensor concepts for Greenhouse Gas accounting in Northern Eurasia (SIBERIA II project)
Nadine Gobron (JRC)
Radiative transfer for vegetation
Inverse methods for development of sophisticated vegetation index
Making sense of retrieval for integration into models
Wolfgang Knorr (MPI)
Overview of land surface processes and modeling
Data assimilation techniques in land surface modeling
DA application for CO2 retrieval for climate research
Shaun Quegan (University of Sheffield)
The terrestrial carbon cycle - processes and data
Earth Observation techniques and the carbon cycle
Assimilating EO data into carbon cycle models
Henri Laur (ESA-ESRIN)
Introduction to Envisat Mission

Computing Practicals

Remote Sensing Tutorial (UNESCO-Bilko)
Naoise O'Reilly and Doug McNeal (SOC)
Envisat toolboxes & BILKO lessons

Data Assimilation Tutorial (http://darc.nerc.ac.uk/models/)
Amos Lawless and Stefano Migliorini (DARC)
Effect of statistical analysis parameters I
Sequential assimilation with the Lorenz system
4D-Var and incremental 4D-Var for the Lorenz system
Atmospheric retrieval methods
Projects/ Follow up previous practicals