



WP3 Innovative DA techniques

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WP3 Participants

Work package number	3	Start date or starting event:				M0
Work package title	Innovative Data Assimilation techniques					
Activity Type¹	RTD					
Participant number	1	2	3	4	5	6
Participant short name	ULg	UREAD	AWI	TUD	CNRS	NERSC
Person-months per participant:	6	12	10	7	13	5

WP3 Tasks

- Task 3.1: Report on current stochastic DA methods for MyOcean.
- Task 3.2: Generate a living document on existing and new stochastic DA methods for MyOcean.
- Task 3.3: Develop objective comparison of non-Gaussian assumptions.
- Task 3.4: Generate standard implementation of the new methods as modules.

WP3 Deliverables

Description	Months	0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48
3 Innovative Data Assimilation techniques																		
3.1 Non-linear data-assimilation methods		■	■															
3.2 Develop new non-linear DA methods				■	■	■	■	■	■	■	■	■	■	■	■			
3.3 Non-Gaussian assumptions						■	■	■	■	■	■	■	■	■	■	■		
3.4 Standard implementation										■	■	■	■	■	■	■	■	

- D3.1: Report on current DA methods (M6)
- D3.2: Living document on new DA methods (M6)
- D3.3: Implementation of one common new DA method in all toolboxes (M36)
- D3.4: Codes of new methods compliant with WP1 (M42)
- D3.5: Final living document including uncertainty estimation (M48)

Deliverable 3.1

- D3.1 currently includes
 - Ensemble methods (various variants of EnSRF & pert. obs EnKF)
 - Particle filters (PF) (equivalent weight & auxiliary)
 - Gaussian mixture particle filter (GMPF)
 - Various resampling methods for PFs & GMPF
- Still missing
 - Hybrid methods
 - Rank Histogram Filter
 - Other methods that have been implemented in SANGOMA community

Deliverable 3.2

- Currently working on new methods, with interest in:
 - Rank Histogram Filter
 - Anamorphosis schemes
 - Parameter estimation using ensemble & PF methods
 - Particle smoothers
 - Mixture filters
- Currently deliverable includes proper orthogonal decomposition (POD) calibration method.