

Working Group “Dynamics and Coupling”
 * the new topics in 2004

Proposed projects: I. **Non-hydrostatic dynamics**
 II. **Dynamics – other topics**
 III. **Coupling**

Project	Topic	Risk factor 3-risky 2-middle 1-no risk	Estimated efforts [person x months]				Total per project
			Total	Local work	Non LACE funds	LACE support	
I.	Iterative schemes		3	2		1 (at Vienna)	12
	Choice of additional NH variables		1	1	-	-	
	Bottom boundary condition		4	2		2 (at Prague and TLS)	
	Finalization of NH Dynamics		2/?	2	-	-	
	Diabatism in NH		2	-	1 (at TLS)	1 (at TLS)	
II.	Horizontal diffusion (SLHD)		6 /?	6	-	?(at Prague)	12
	Radiative UBC		3	2-3	-	1 (at TLS)	
	Physics/dynamics interface		2	1	-	1 (stay at Prague)	
	Case Study in High resolution		1	1	-	-	
III.	No actions planned within LACE					0	
Total for WG “Dynamics and Coupling”			24	18	1	5 stays + for newcomers ?	24

Working Group “Physics”

* the new topics in 2004

- Proposed projects:
- I. **Shallow convection / PBL cloudiness**
 - II. **CAPE & deep convection triggering**
 - III. **Orographic drag/envelope**
 - IV. **Physics/dynamics interface**
 - V. **Prognostic cloud water**

Project	Topic	Risk factor	Estimated efforts				Total per project
			Total	Local work	Non LACE funds	LACE support	
I.	Convergence between Xu-Randall and Seidl-Kann schemes (tuning in 3-d)		1	1	-		7
	Experiments on inversion formation and sustenance (3-d cycling experiments)		3	3	-		
	Requirements for vertical diffusion and vertical resolution to simulate formation of sharp inversions (1-d studies)		2	2			
	Analysis of radiative flux divergence and cooling rates in cloud layer (1-d)		1	1	-		
II.	Adopt latest version of Luc Gerard's prognostic scheme for further studies		3?	2		1 (for Bruss) ?	7
	Effect of non-envelope (mean orography) on deep convection		1	1			
	Study initiation and development stage of deep convection using radar and satellite		3	3		2 (Vienna)	
III.	Experiments with, and validation of, newly revised scheme with non-envelope		1	1			2
	Validation of wind forecasts at high mountain stations (dx=10 km, 2.5 km)		1	1			
IV.	Further analysis of physics instabilities (possibly including meso-nh schemes)		2	-?	“?”	-?	2
V.	Solve problem in current implementation of Lopez scheme		1	1			4
	Implement Lopez scheme in CY28		1	1			
	Sensitivity/tuning of Lopez scheme on orographic precipitation cases		2	2			
Total for WG “Physics”			22			3 ?	22

Working Group "Data Assimilation"*** the new topics in 2004**Proposed projects: **I. Methods - Algorithmic aspects****II. Methods - Cycling****III. Observations****IV. Surface****V. Nudging****VI. LAMEPS**

Project	Topic	Risk factor 3-risky 2-middle 1-no risk	Estimated efforts [person x months]				Total per project
			Total	Local work	Non LACE funds	LACE support	
I.	Isotropy properties of the B matrix		1	1	-	-	6
	Tuning of the multivariate humidity formulation in the B matrix		2	2	-	-	
	L-H versus NMC variances		3	1.5	-	1.5 (stay at Budapest)	
II.	Blendvar cycling experiments		5	1	-	4 (2 stay at Prague) (2 stay at Budapest)	5
III.	Assimilation of ATOVS & MSG data		6	6	-	-	16
	Assimilation of Radar data		3	1.5	1.5(stay at Toulouse)	-	
	Assimilation of AMDAR data		3	3	-	-	
	Assimilation of 10m wind data		2	0.5		1.5 (stay at Budapest)	
	Wind profiler data		2	2	-	-	
IV.	Snow analysis experiments		1	1	-	-	1
V.	Latent heat nudging		4	4	-	-	4
VI.	Optimization of ARPEGE singular vector computations for Central -Europe		6	6	-	-	12
	ALADIN EPS using PEACE perturbations		6	6	-	-	
Total for WG "Data Assimilation"			44	34.5	1.5	7	44

