An overview of the namelist settings in ALARO

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The following table with the overview of the namelist switches and most important tuning parameters in ALARO (microphysics, convection) has been prepared during the 3 days visit.

	ALAROminus3MT	**ALARO 3MT**	**ARPEGE *settings inside ALARO***	**comments**
microphysics				
PDF based sedimentation	LLSTASED=T	LLSTASED=T	LLLAGSED=T	statistical/ lagrangian sedimentation, internal (APLMPHYS), hard-coded,
fall speed	LLFSVAR=T	LLFSVAR=T	LLFSFIX=T	variable (autocomputed)/ fixed(prescribed) fall speed, internal (APLMPHYS), hard-coded,
WBF process	yes (RWBF1=300)	yes (RWBF1=300)	-	dWBF-process uses constant RWBF1 (=0 to switch it off)
diagnostic graupel	LLPSGRP=T	LLPSGRP=T	-	
local options				
ACACON	LLA0MPS=T	LLA0MPS=T	LLARPSC=T	internal, hard-coded option
ACCOLL	LLA0MPS=T	LLA0MPS=T	LLARPSC=T	internal, hard-coded option
ACEVMEL	LLA0MPS=T	LLA0MPS=T	LLARPSC=T	internal, hard-coded option
condensation-evaoporation				
	LXRCDEV=.T. LSMGCDEV=.F.	LXRCDEV=.T. LSMGCDEV=.F.	-	use modified Xu-Randall method
	LXRCDEV=.F. LSMGCDEV=.T.	LXRCDEV=.F. LSMGCDEV=.T.	*(similarities to LSMGCDEV=.T.)*	use Smith-Gerard method
cloud geometry (for microphysics)				
	LLRNUMX=T	LLRNUMX=T	-	use maximum overlap of adjacent clouds
	LLRNUMX=F		-	random overlap of adjacent clouds
(most important) microphysics tuning parameters				
RAUTEFR	2.E-03	2.E-03	1.E-03	efficiency for autoconversion water -> rain
RAUTEFS	2.E-03	2.E-03	1.E-03	efficiency for ac ice -> snow
RQLCR	3.E-04	3.E-04	2.E-04	critical ql for ac
RQICRMAX	5.E-05	5.E-05	3.E-05	maximal critical ql for ac
RQICRMIN	8.E-07	8.E-07	2.E-07	minimal critical ql for ac

convection scheme				
protection of convective condensate				
		LXRCDEV=T LNEBCV=T		use convective cloud cover to protect condensate during adjustment
		LSMGCDEV=T LNEBCV=F		
convective cloud cover				
		LLDEQG=T GVCTAUDE=900		use qc detrainment budget for conv cloudiness computation, internal (ACCVUD)
		LLDEQG=F GVCTAUDE=450 0		use mass detrainment budget for conv cloudiness, internal (ACCVUD), more suitable for higher resolution?
closure assumption				
		LCVGQD=F LCVGQM=F (GCOMOD=0)		basic option: use vertical turbulent transport + dynamical part as input for moisture convergence, no modulation done ((LCVGQM=F), no scaling (GCOMOD=0), suitable for resol. ~ 10km, but not below 5
		LCVGQD=T *LCVGQM=F*		no turbulent contribution for closure, no modulation
		LCVGQD=F LCVGQM=T RMULACVG=30		use vertical turbulent transport + dynamical part as input for moisture convergence, recommended value for modulation parameter RMULACVG
		LCVGQD=T LCVGQM=T RMULACVG=30		not turbulent contribution for closure, modulation done
		LCVGQD=F/T LCVGQM=F/T (GCOMOD>0)		to be developed: basic option + scaling (hypothetical)
include melting/freezing effect to prognostic updraft		NIMELIT=2		number of iterations to include the effect (aplmini), NIMELIT=0 to switch it off
(most important) convection tuning parameters				
GCVNU	2.5E-05	1.0E-05		entrainment rate for dilute plume bouyancy
GCVALFA	4.5E-05	3.E-05		coefficient for entrainemt for cloud bouyancy
TENTR	2.5E-06	5.0E-06		updraught entrainment rate
TENTRX	8.0E-05	1.6E-04		max entrainment rate for updraught
GDDEVF		0.5		