Cloud Variables in GRIB2 and ICON

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February 14, 2014

Description	**Type**	**DWD ShortName**	**ICON ShortName**	**ECMWF ShortName**	**Discipline**	**Category**	**Number**
Specific humidity	(tot/diag)	QV_DIA	tot_qv_dia	xxx	0	1	211
Cloud mixing ratio	(tot/diag)	QC_DIA	tot_qc_dia	xxx	0	1	212
Cloud ice mixing ratio	(tot/diag)	QI_DIA	tot_qi_dia	xxx	0	1	213
Cloud cover	(tot/diag)	CLC	clc	xxx	0	6	22
Water vapor path	(tot/diag)	TQV_DIA	tqv_dia	xxx	0	1	214
Cloud water path	(tot/diag)	TQC_DIA	tqc_dia	xxx	0	1	215
Cloud ice path	(tot/diag)	TQI_DIA	tqi_dia	xxx	0	1	216
Total cloud cover	(tot/diag)	CLCT	clct	xxx	0	6	1
Specific humidity	(dyn/prog)	QV	qv	q	0	1	0
Cloud mixing ratio	(dyn/prog)	QC	qc	clwmr	0	1	22
Cloud ice mixing ratio	(dyn/prog)	QI	qi	xxx	0	1	82
Rain mixing ratio	(dyn/prog)	QR	qr	rwmr	0	1	24
Snow mixing ratio	(dyn/prog)	QS	qs	snwr	0	1	25
Water vapor path	(dyn/prog)	TQV	tqv	tciwv	0	1	64
Cloud water path	(dyn/prog)	TQC	tqc	xxx	0	1	69
Cloud ice path	(dyn/prog)	TQI	tqi	xxx	0	1	70
Rain path	(dyn/prog)	TQR	tqr	tcolr	0	1	45
Snow path	(dyn/prog)	TQS	tqs	tcols	0	1	46

Path refers here to a vertical integral over the full atmosphere.

The *tot/diag* variables are the tracers used by advection and microphysics. They are based on the assumption that there is no sub-grid-scale variability. The *dyn/prog* variables are calculated by taking into account sub-grid-scale variablity that includes simple treatments of turbulent motion and convective detraiment. These variable are used by radiation and represent the cloud variables that attempt to represent all model included physical processes.