

NWP – SCM Comparison during RACORO

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Three Cases

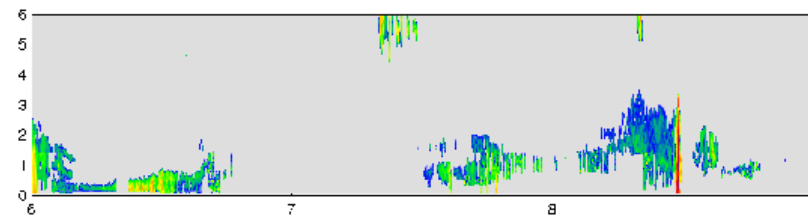
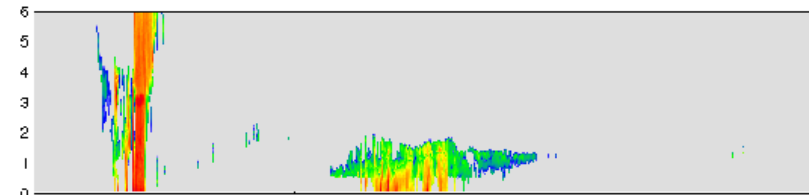
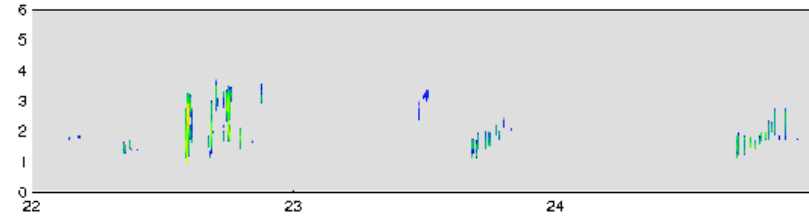
Case 1: Cu with variable aerosols

Case 2: Cu and drizzling Sc

Case 3: Variable cloud types

Two NWP and 2SCMs

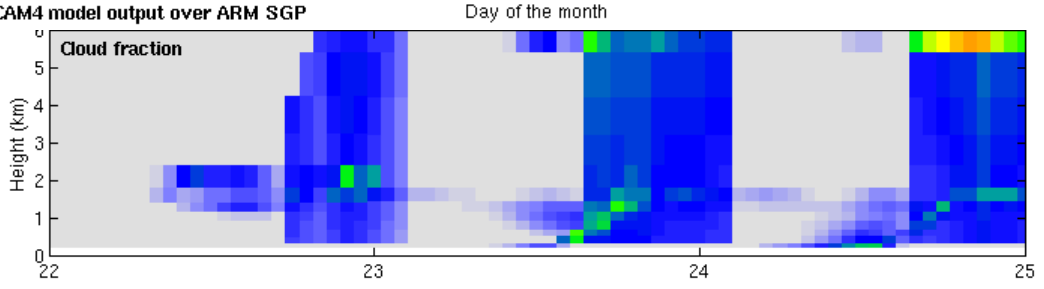
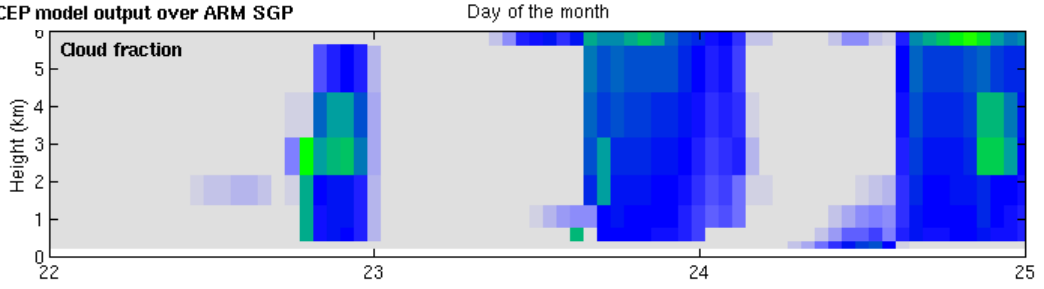
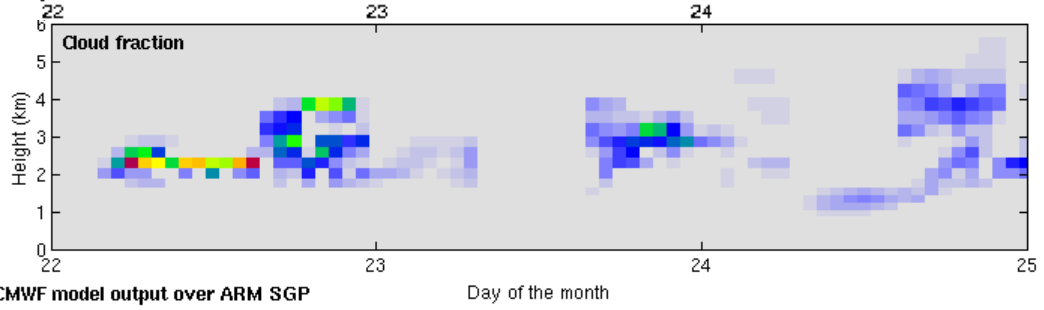
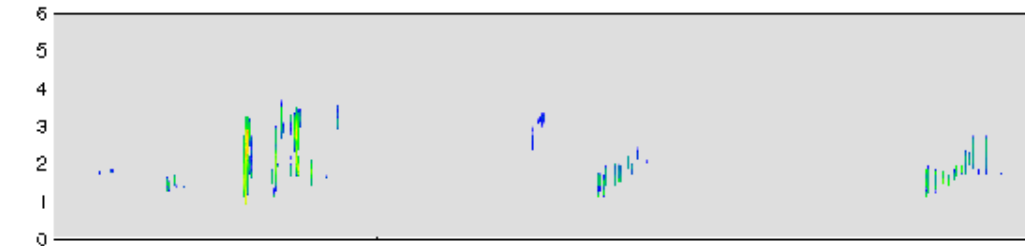
	Horizontal Resolution	Vertical levels	dz @ 2 km
ECMWF	25 km	91	260 m
NCEP	35 km	64	300 m
SCAM4	170km	26	1 km
SCAM5	170km	30	700 m



Compare cloud fraction, liquid water mixing ratio, and relative humidity

Case 1: 22 -24 May

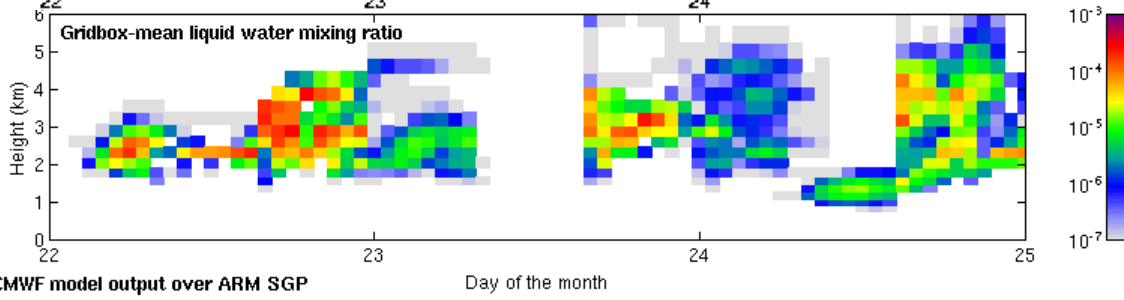
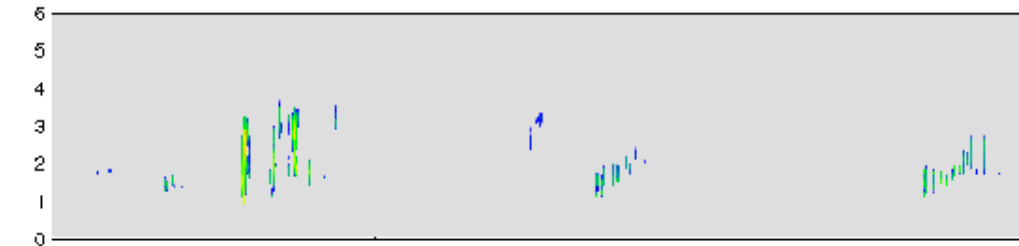
Cloud fraction



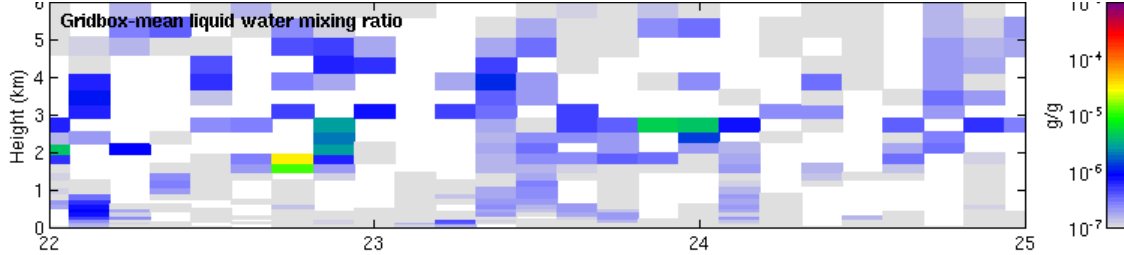
Note: low cloud fraction values extending through vertical extent is due to frozen precipitation falling from above

Cu Case: 22 -24 May

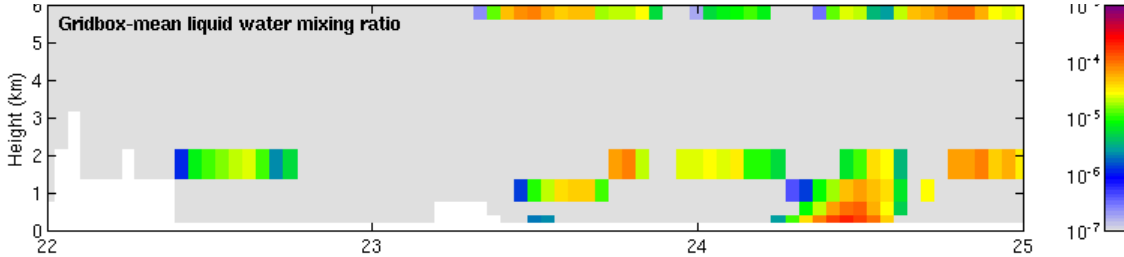
Liquid mixing ratio



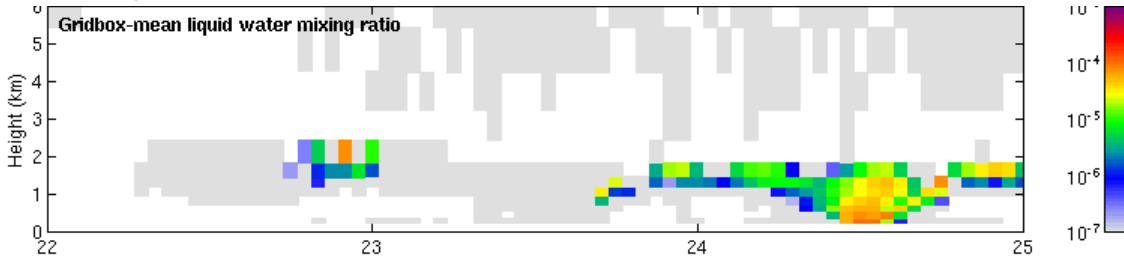
ECMWF model output over ARM SGP



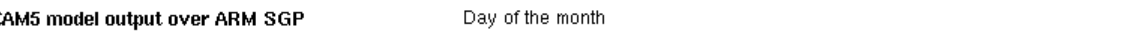
NCEP model output over ARM SGP



SCAM4 model output over ARM SGP

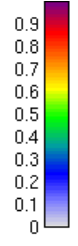
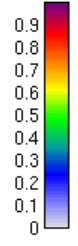
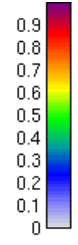
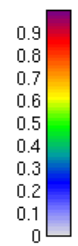
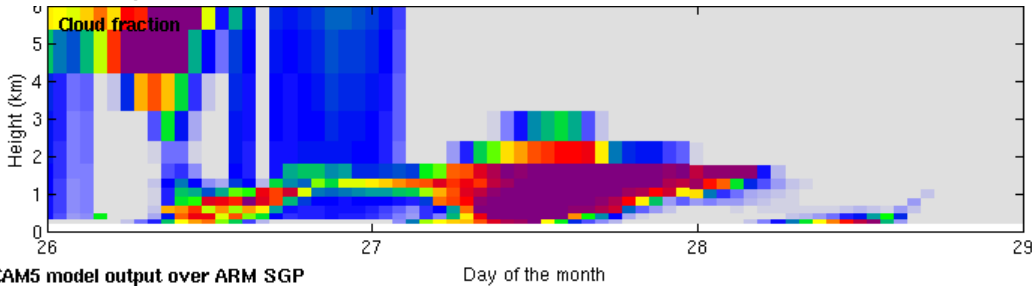
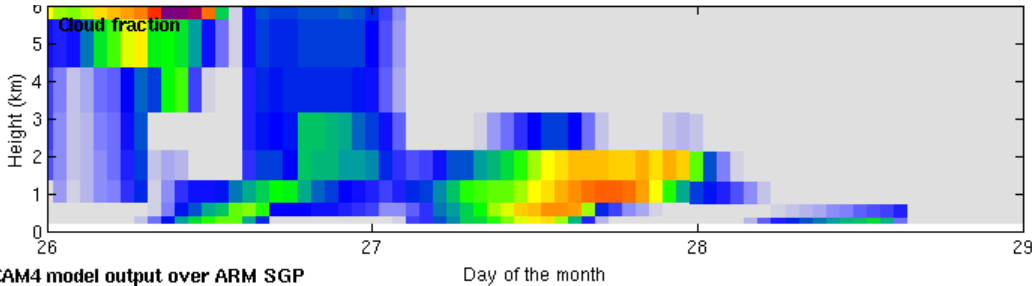
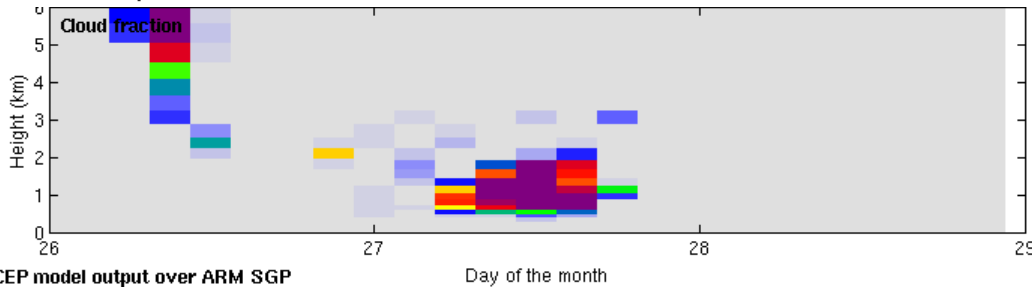
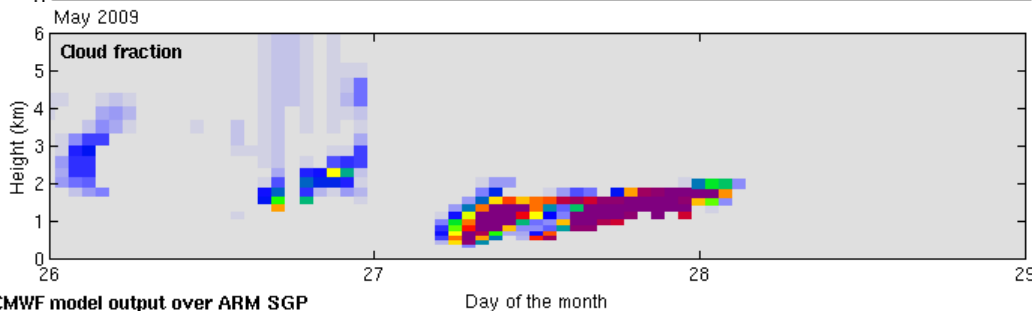
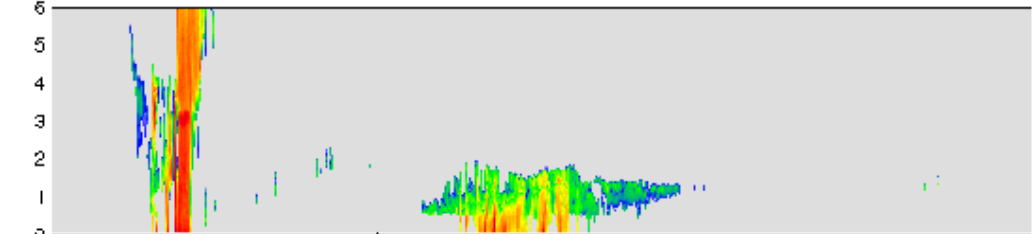


SCAM5 model output over ARM SGP



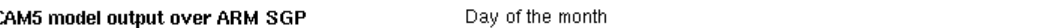
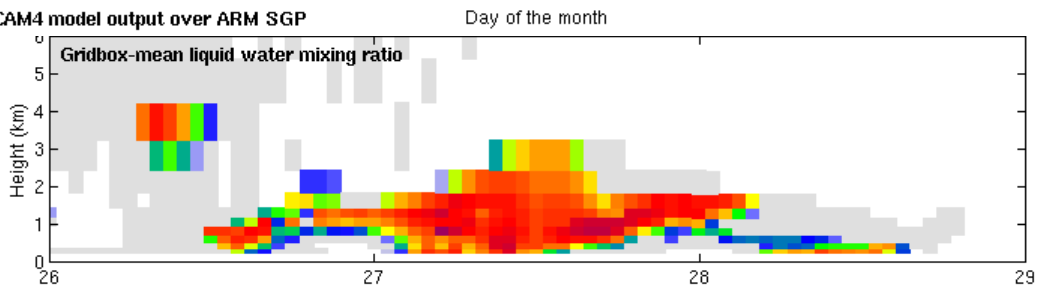
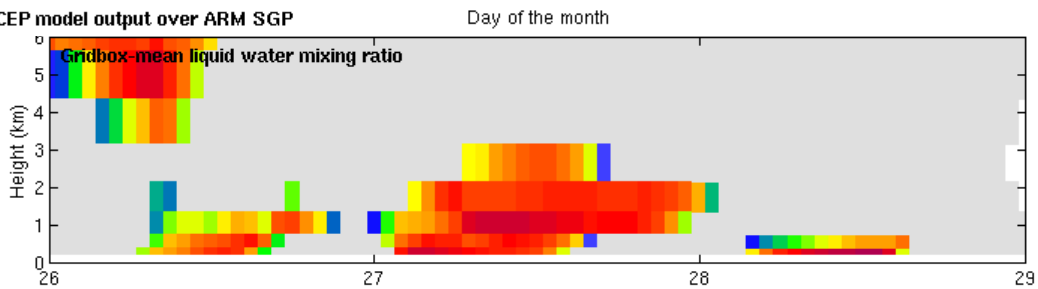
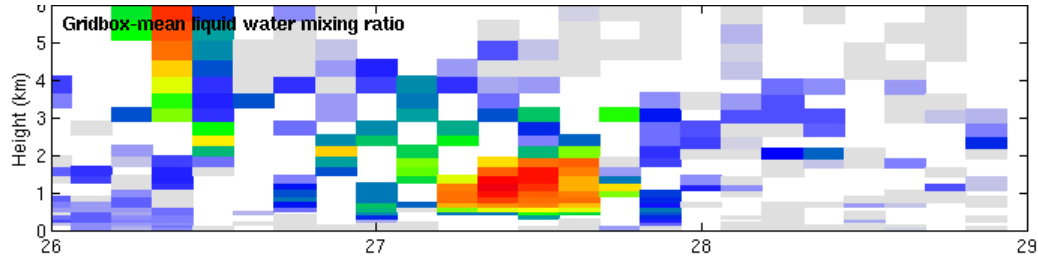
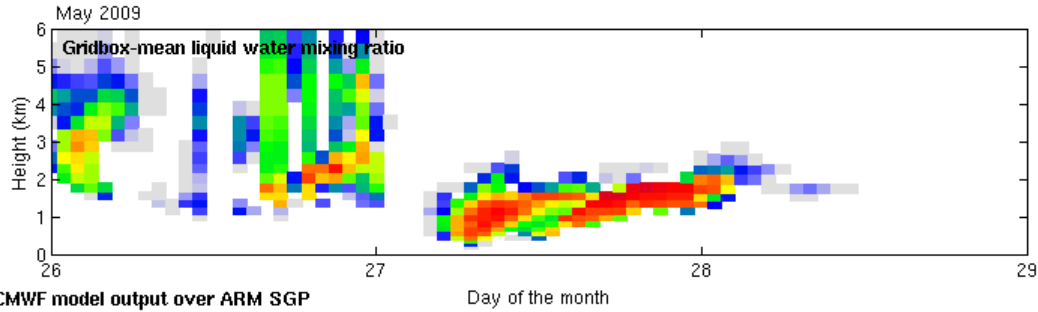
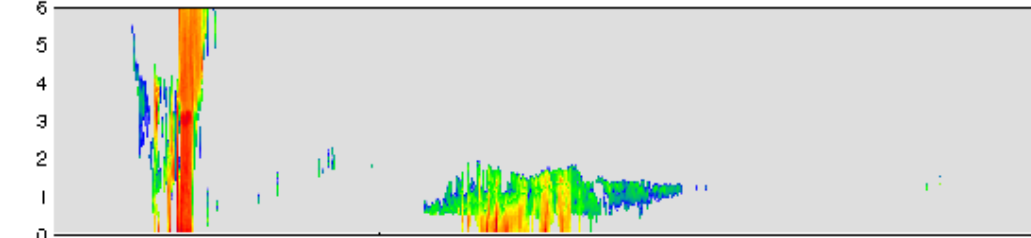
Case 2: 26 -28 May

Cloud fraction



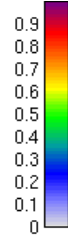
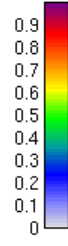
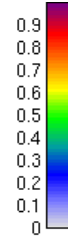
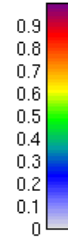
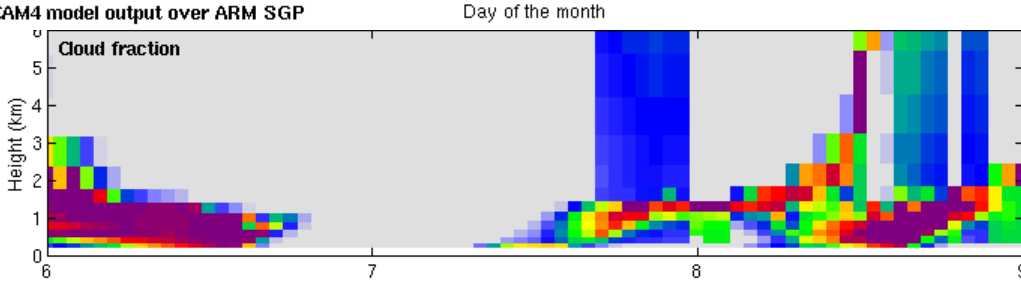
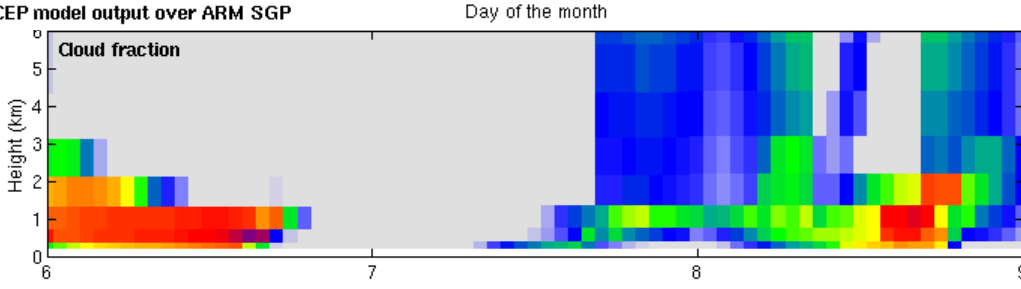
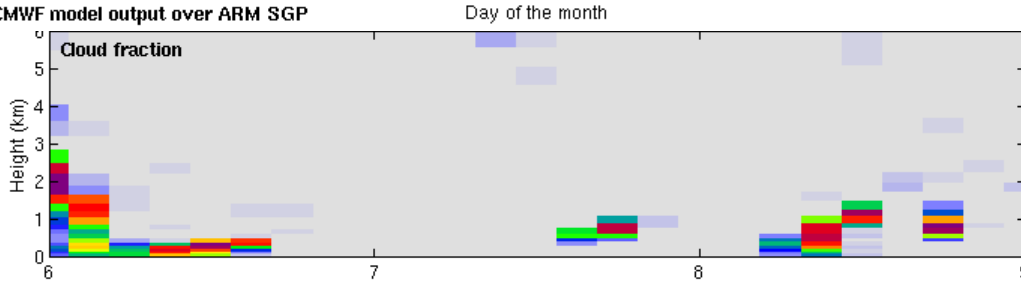
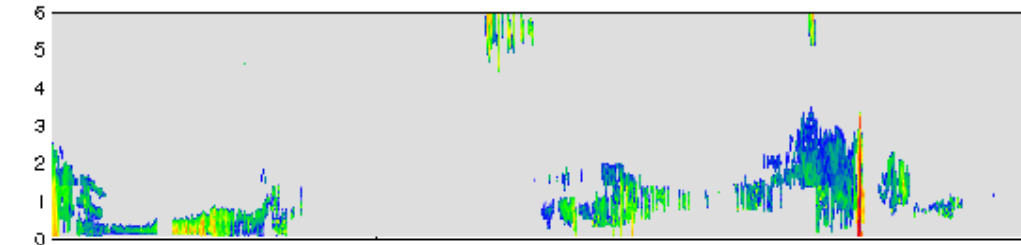
Case 2: 26 -28 May

Liquid mixing ratio



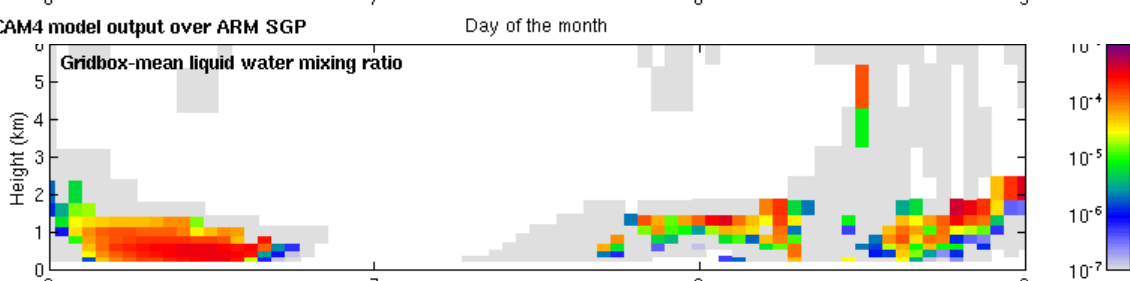
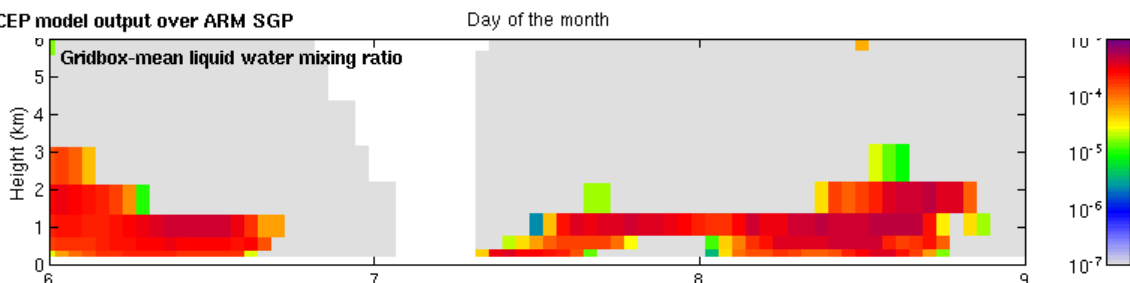
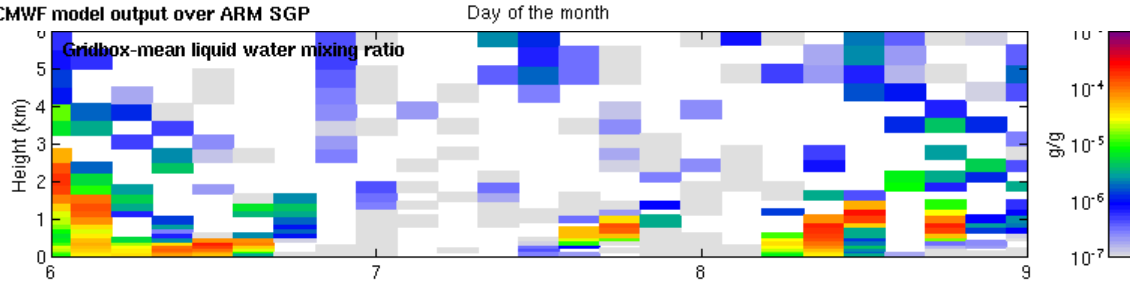
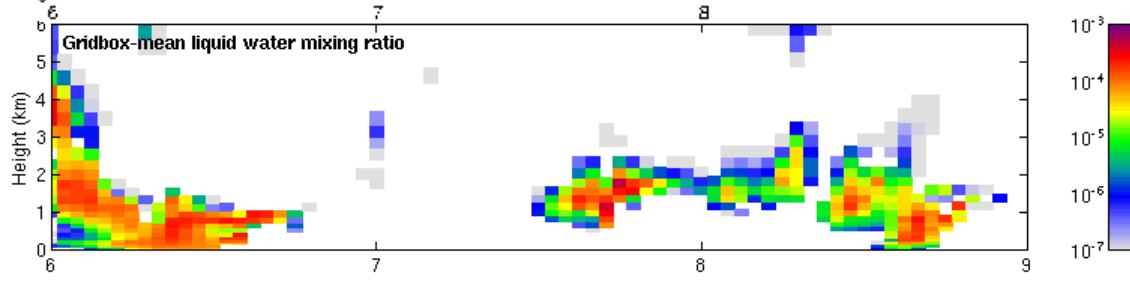
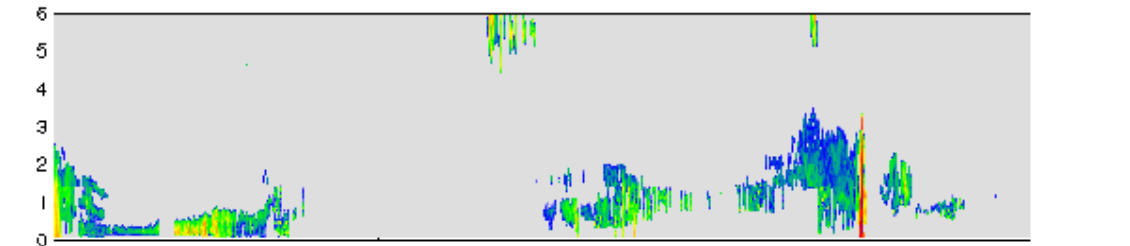
Case 3: 6 -8 May

Cloud fraction



Various Case: 6 -8 May

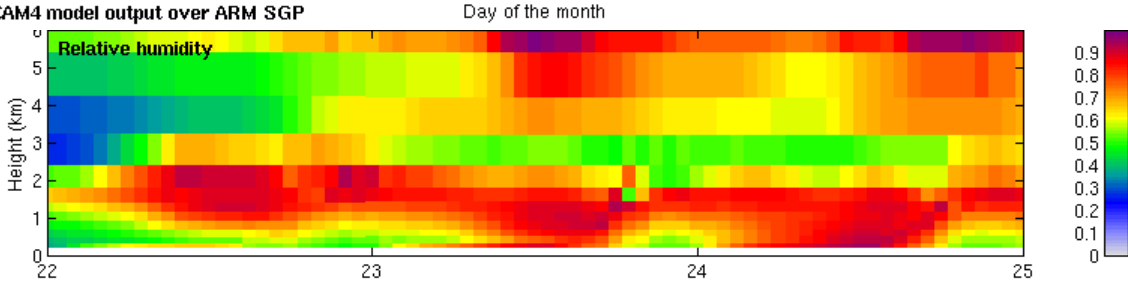
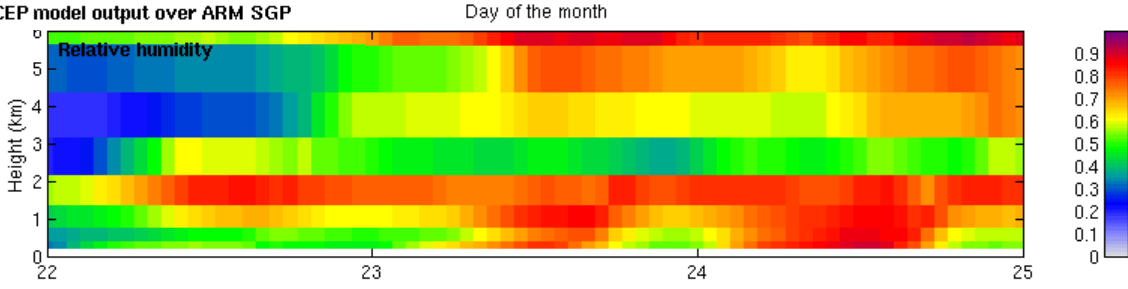
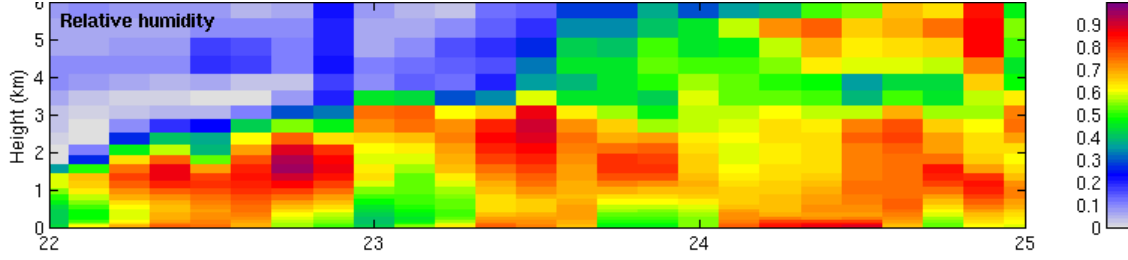
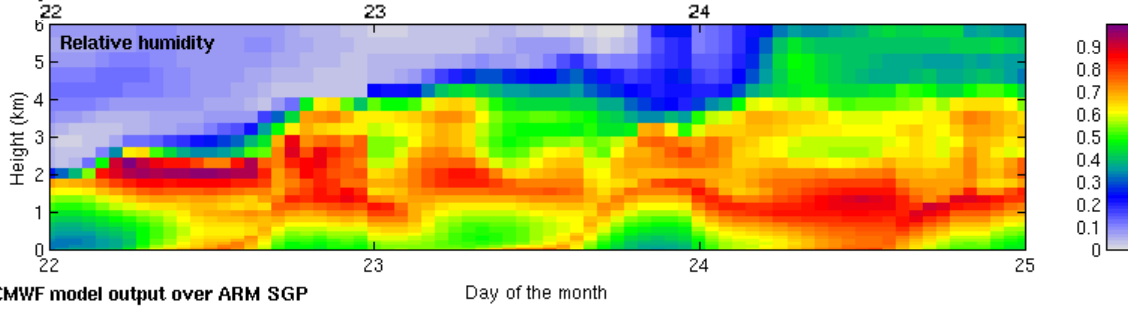
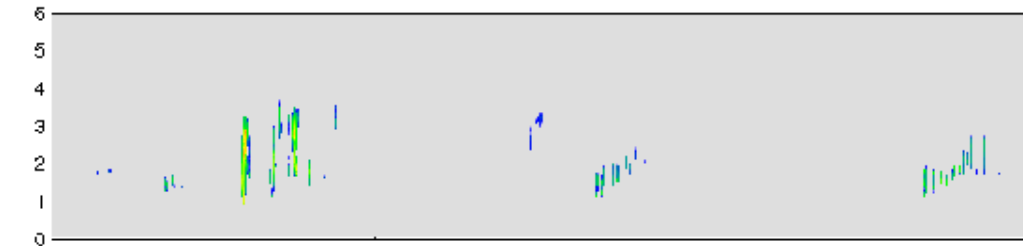
Liquid mixing ratio



SCAM5 model output over ARM SGP

Cu Case: 22 -24 May

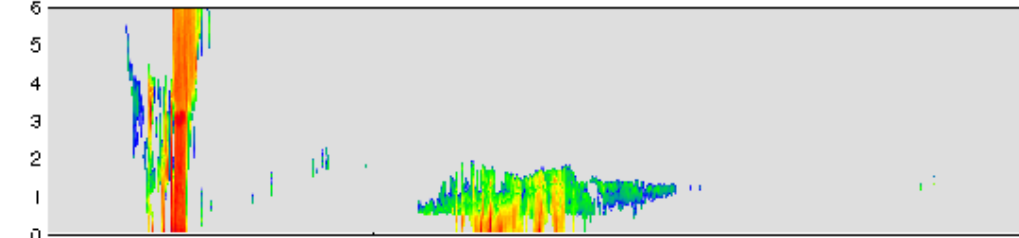
Relative humidity



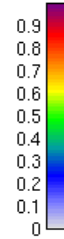
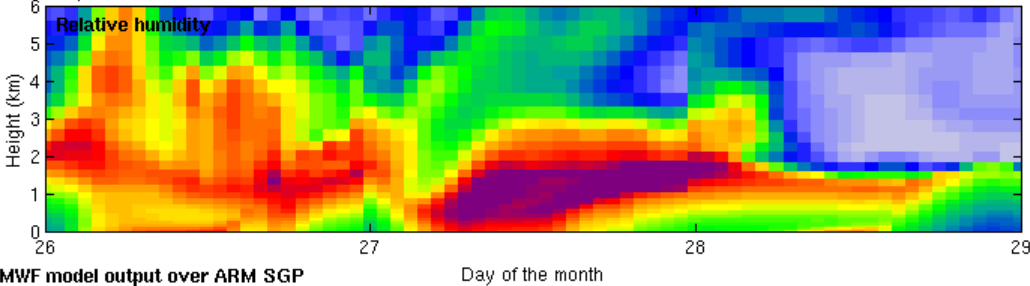
SCAM5 model output over ARM SGP

Sc Case: 26 -28 May

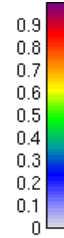
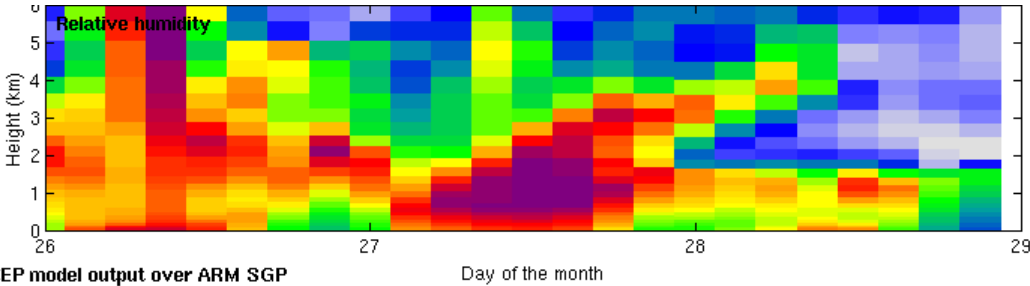
Relative humidity



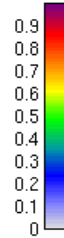
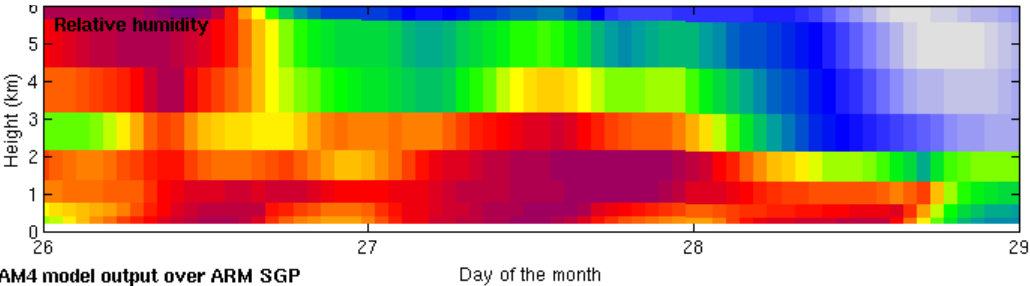
May 2009



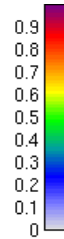
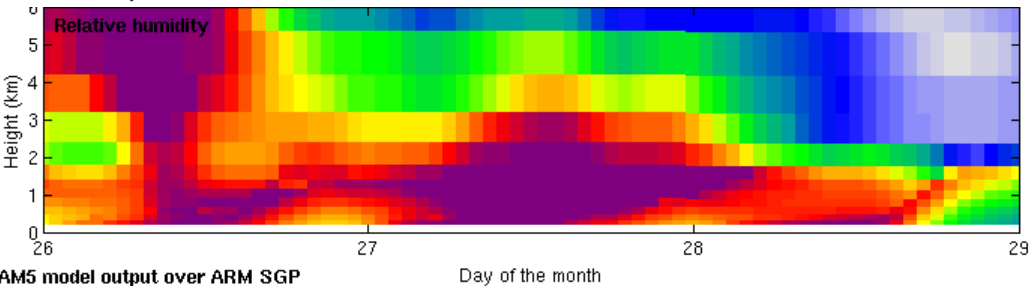
ECMWF model output over ARM SGP



NCEP model output over ARM SGP



SCAM4 model output over ARM SGP



SCAM5 model output over ARM SGP

Various Case: 6 -8 May

Relative humidity

