The Abdus Salam
International Centre for Theoretical Physics

United Nations
Educational, Scientific and
Cultural Organization

IAEA
International Atomic Energy Agency

2148-Presentations

Fifth ICTP Workshop on the Theory and Use of Regional Climate Models

31 May - 11 June, 2010

The summer months of 2003 in the Mediterranean Basin

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The summer months of 2003 in the Mediterranean Basin

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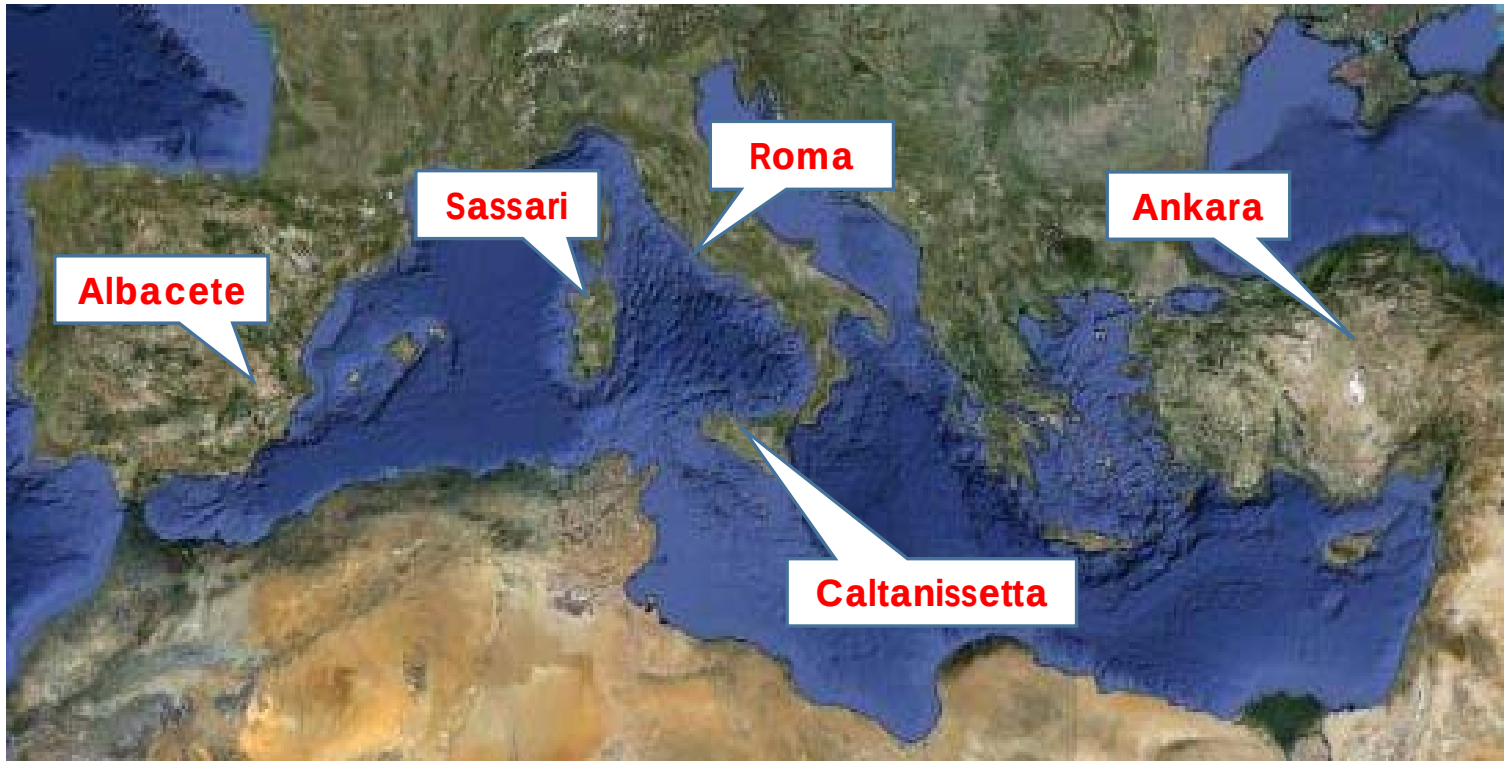
5th ICTP RegCM Workshop
31st May - 11th June 2010

Objectives

- Different simulations were tried over the MEDITERRANEAN BASIN for the period Jun-Jul 2003
- This summer was exceptionally hot and we wanted to observe the response of the RegCM4, over the region to different:
  - Convective schemes and
  - Land Surface Models
- Grid Point Analysis at 5 chosen points (Albacete, Sassari, Caltanissetta, Roma, Ankara)

Simulations' Setup

- Domain considered – the MEDITERRANEAN BASIN
- Size – 80 × 160 grid points (clat = 39, clon = 15)
- Horizontal Resolution – 25 km



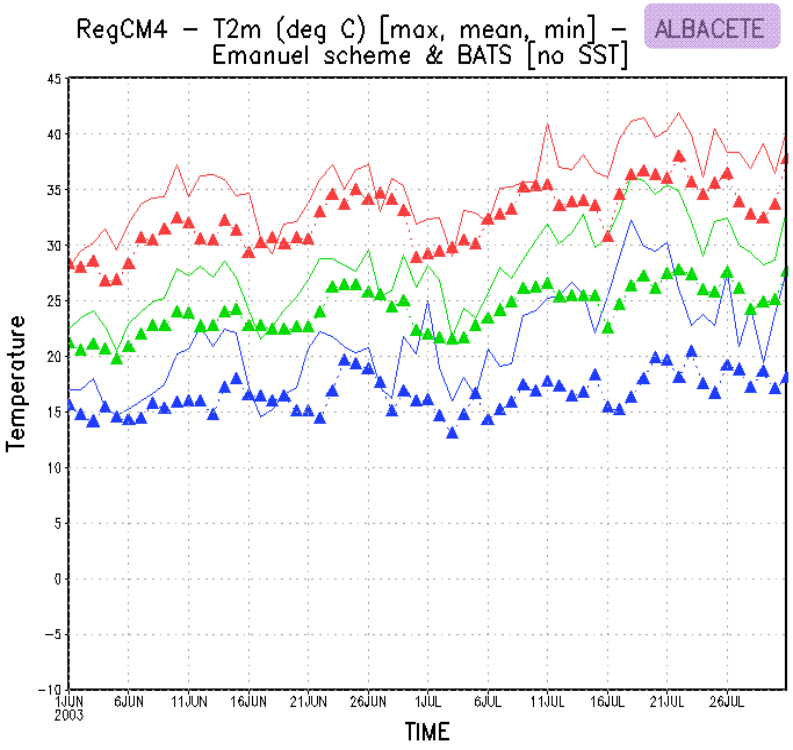
Simulations Done

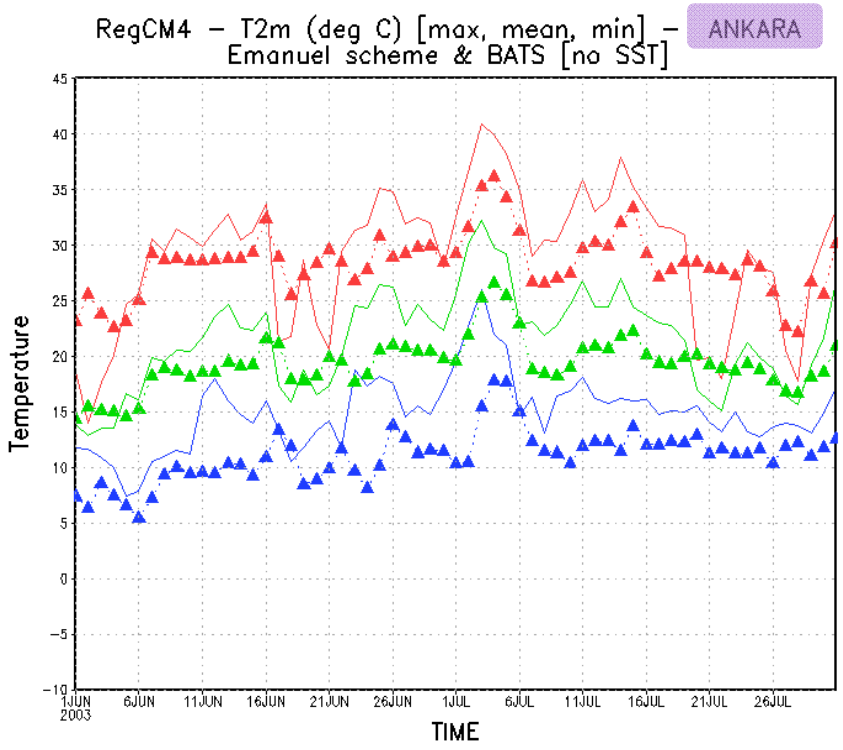
SimNo	LSM	Ver	F-Bug	CS	Clos	abatm
1	BATS	940	No	E	F-C	225
2	BATS	961	Yes	E	F-C	225
3	BATS	961	Yes	G	F-C	225
4	CLM	986	Yes	G	F-C	600

- In none of the simulations the SST was used
- In Sim 1 – The Chemical Module was used for 4 Dust bins only and there isn't a month spin-up compared toother simulations
- imask = 2, dt = 75, radfrq = 30, abemh = 18, ibdyfrq = 6

Results

[Max, Mean, Min] Temperature at 2m (°C) for Jun-Jul – Simulation 1 vs 2





With marker – Sim 1 – No Bug
Full line – Sim 2 – With F-Bug

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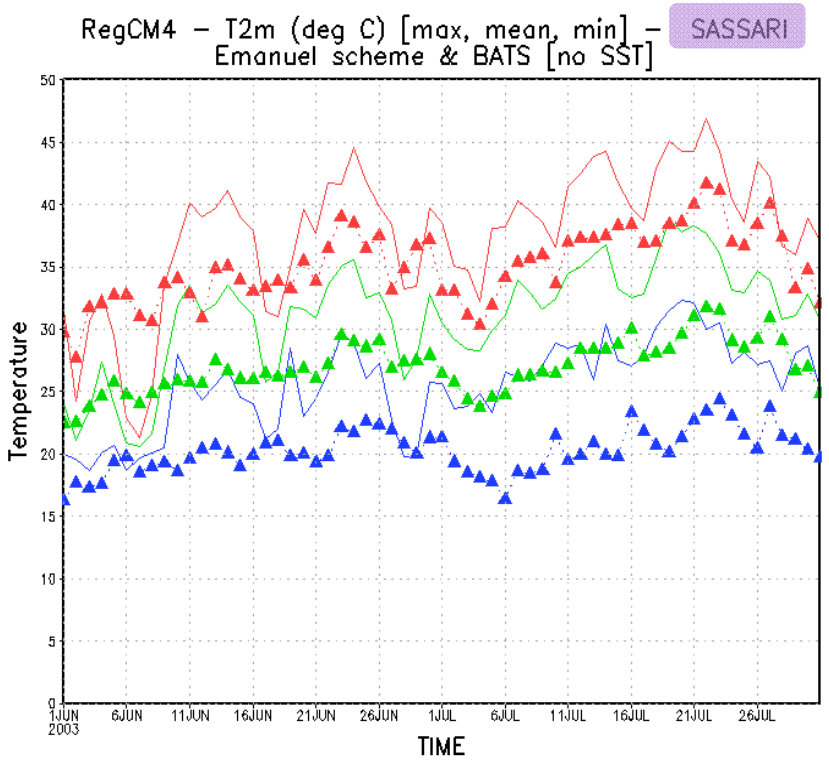

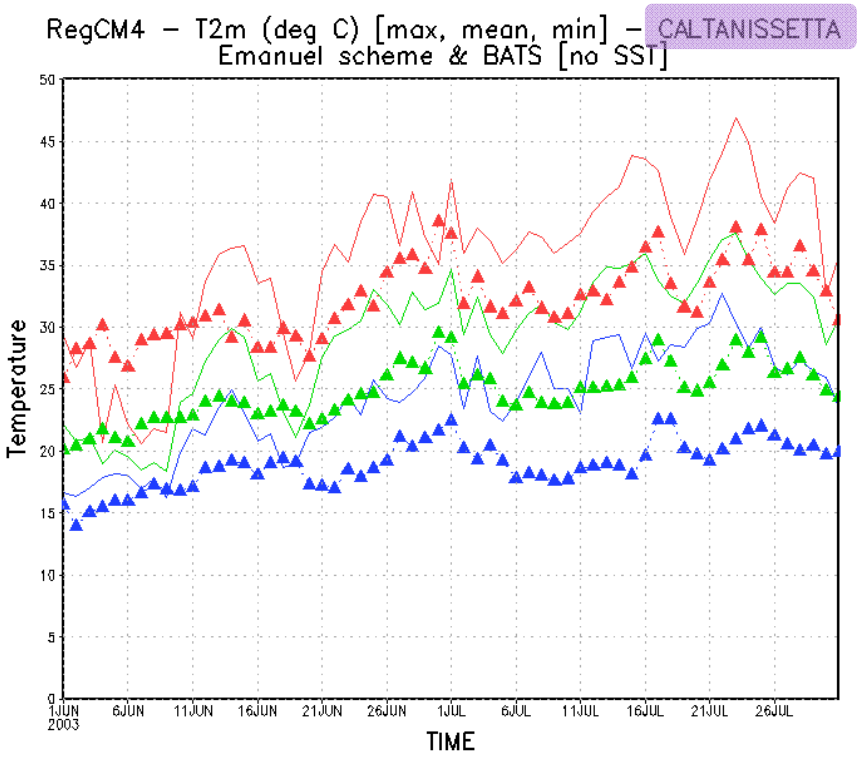

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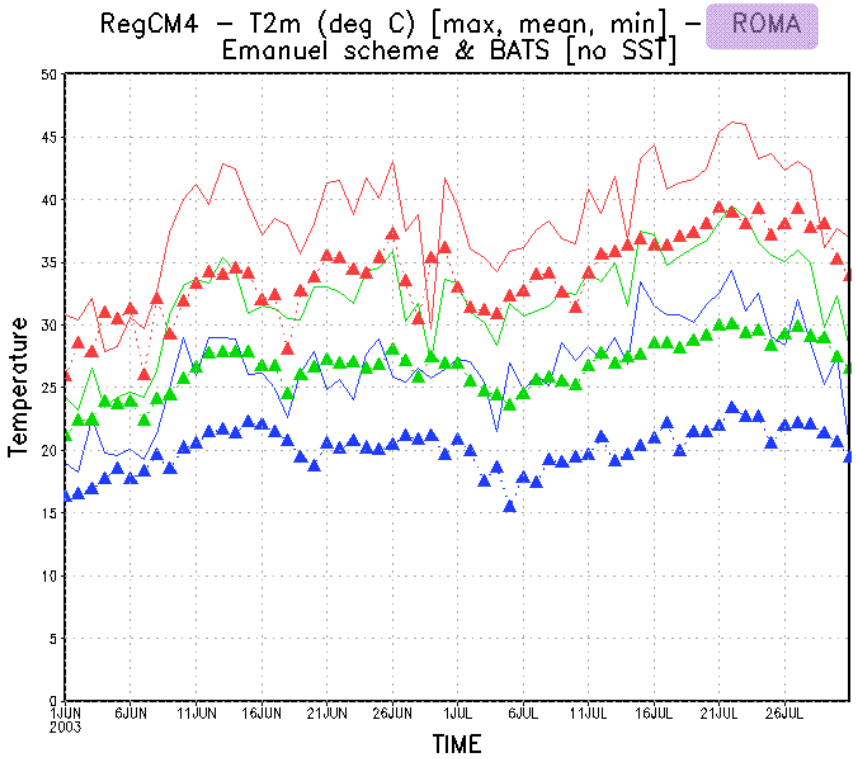

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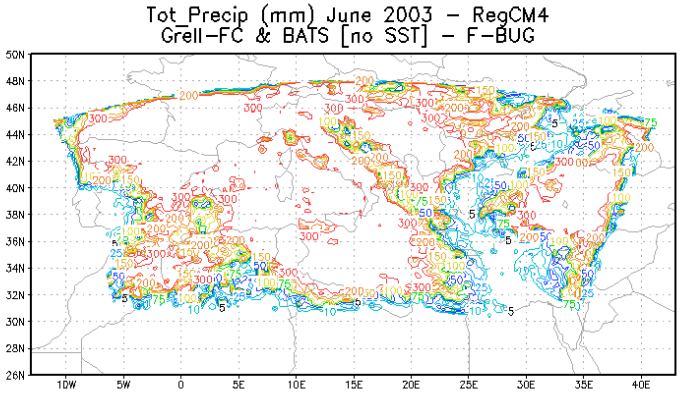
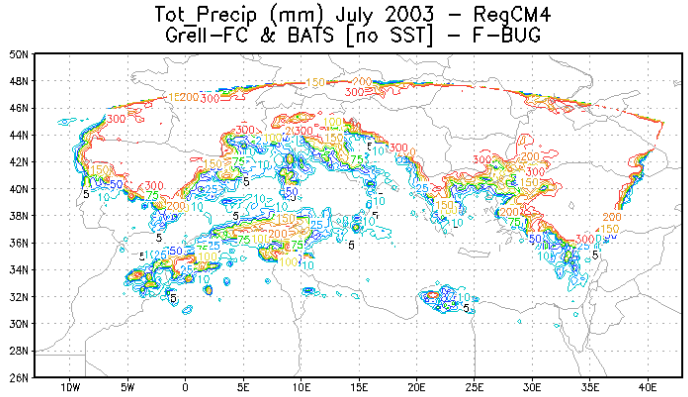
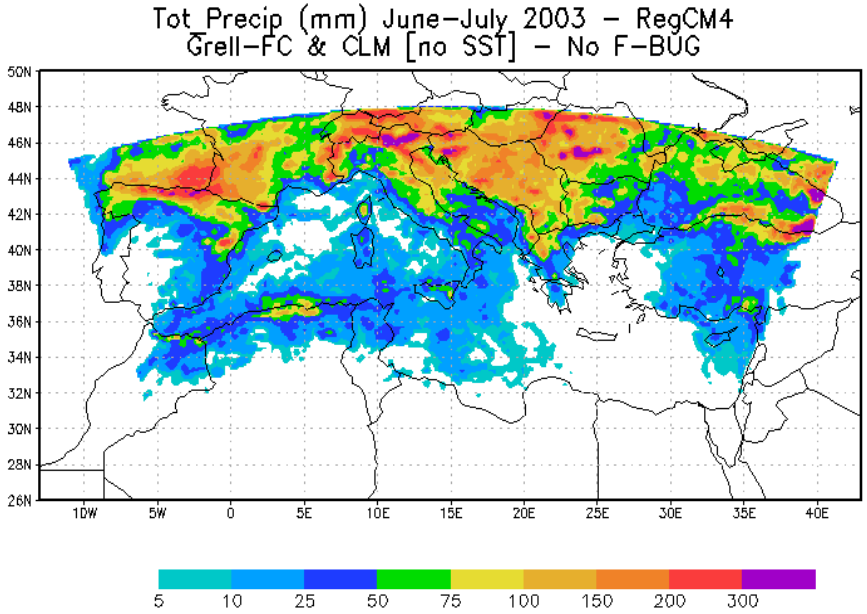
Total Accumulated Precipitation (mm) for Jun-Jul – Simulation 3 vs 4





BATS

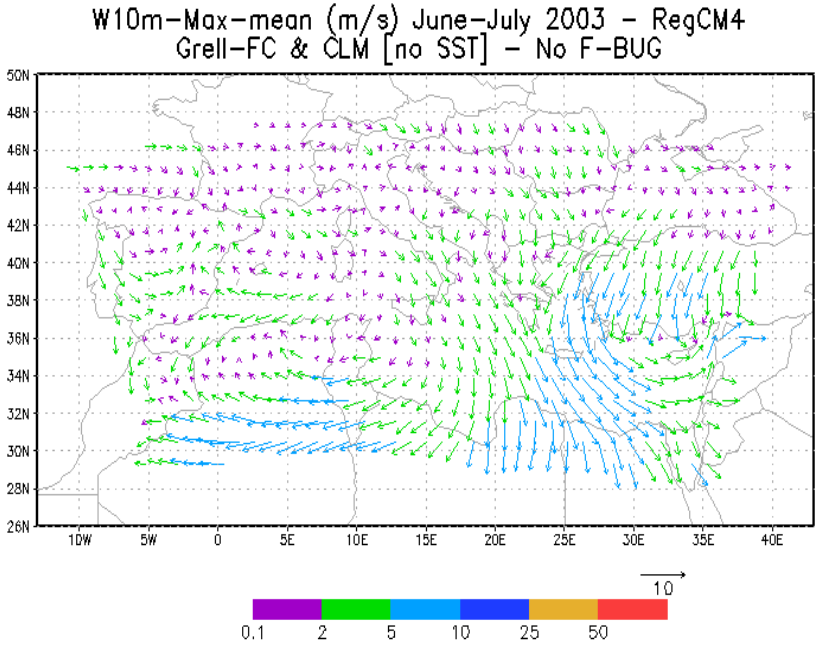
with the F-Bug !!



CLM

Results

Max Wind Speed Mean at 10m (ms^{-1}) for Jun-Jul – Simulation 3 vs 4



BATS

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CLM