

Planned Development at the University of Athens

CIRCE is an EU project recently approved and is expected to start during Fall

The main objectives of the project are:

- To study regional Mediterranean climate
- Links and feedbacks between air quality and climate
- Impacts on regional climate and ecosystems

Planned Development at the University of Athens

The Atmospheric Modeling and Weather Forecasting Group of UOA has the responsibility to improve and apply existing models for regional climatic simulations

The models that will be used are:

RAMS

LAPS

SKIRON/Eta with dust capabilities

CAMx

on an integrated way.....

Planned Development at the University of Athens

RAMS development at the framework of CIRCE includes:

- Direct coupling of the gas and aqueous phase chemistry
- Inclusion of heterogeneous chemistry processes
- Mineral dust cycle
- Salt spraying
- Radiative effects of anthropogenic and naturally produced aerosols
- Links with cloud processes

Planned Development at the University of Athens

Additional development is related to:

SKIRON/Eta development of processes related to mineral dust and radiative effects

High resolution limited area reanalysis (50 years) with the aid of LAPS

WAM development related to assimilation of both wave (SWH and directional spectra) and winds (near surface)

RAMS-Hg further adjustment and applications

Planned Development at the University of Athens

Hg is a regulated specie in Europe and US

Arguments are related to the efficiency of reduction policies

Planned activities:

- RAMS-Hg further adjustment and application for long periods
- RAMS-Hg, CMAQ-Hg, CAMX-Hg intercomparison
- Scenario simulations for policy

Planned Development at the University of Athens

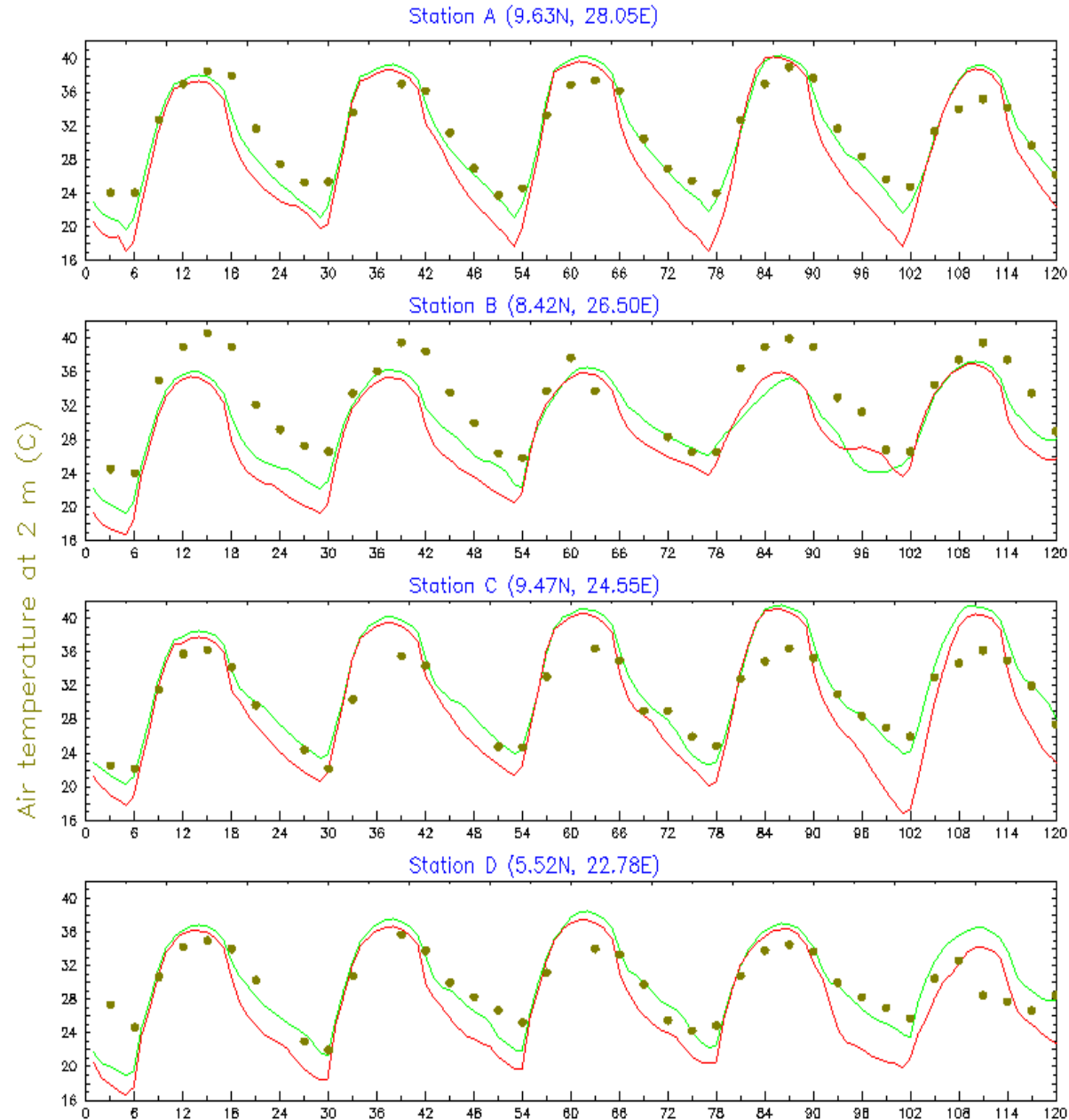
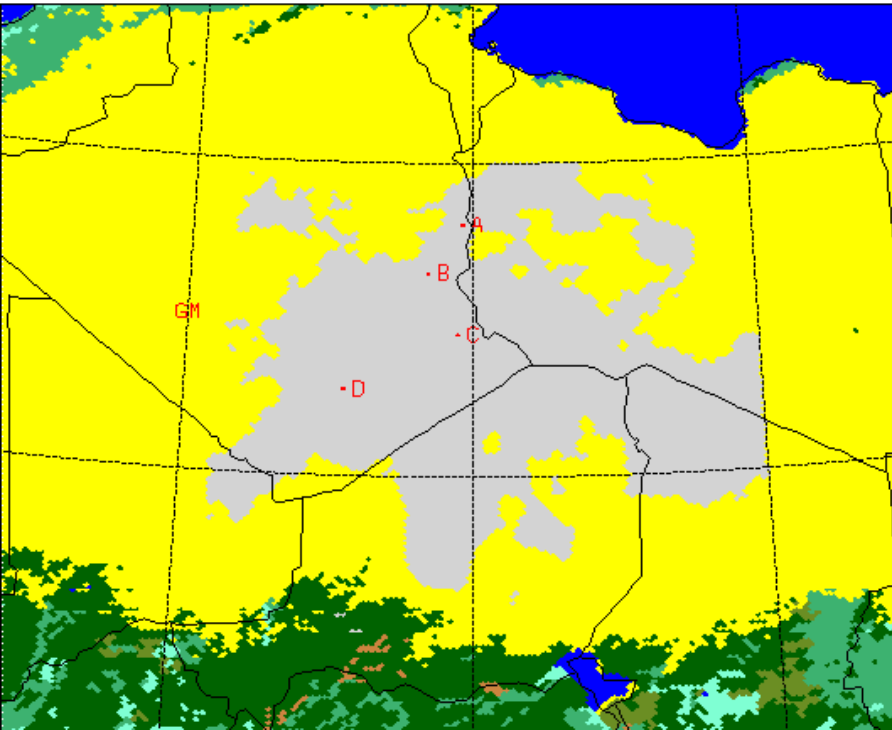
Other RAMS related activities are in the fields of:

- Marine applications
 - Linking RAMS with marine ecosystems models (INSEA project)
 - Optimal ship routing (Bellman programming) in complex ship routes (e.g. near islands, harbors) through adaptive relocation
- Airport management
 - High resolution forecasts
 - Extreme weather
 - Air quality near the vicinity of the airports
- Wind Energy applications
 - Energy prediction curves

Surface characteristics

	Soil textures	θ_{max}	$-\Psi_{sat}$	b	θ_{wilt}	K_{SMC}^{sat} (10^{-4})
1	loamy sand	0.410	0.090	4.38	0.0750	1.563
2	silty clay loam	0.477	0.356	7.75	0.2181	0.017
3	silty clay	0.492	0.490	10.40	0.2832	0.010
4	sandy loam	0.435	0.218	4.90	0.1142	0.341
5	sandy clay	0.426	0.153	10.40	0.2193	0.022
6	clay loam	0.476	0.630	8.52	0.2498	0.025
7	sandy clay loam	0.420	0.299	7.12	0.1749	0.063
8	loam	0.451	0.478	5.39	0.1547	0.070
9	ice	0.410	0.090	4.38	0.0750	1.563
10	water	-	-	-	-	-
11	Rocky soil	0.090	1.000	4.00	0.0200	0.00001
12	sand	0.395	0.121	4.05	0.0677	1.760

Effects of Soil Thermophysical Properties on Saharan ABL



RMSE	Rocky soil	Sand
A	2.07	4.02
B	4.07	5.31
C	2.57	3.75
D	2.82	4.07
AVG	2.98	4.34