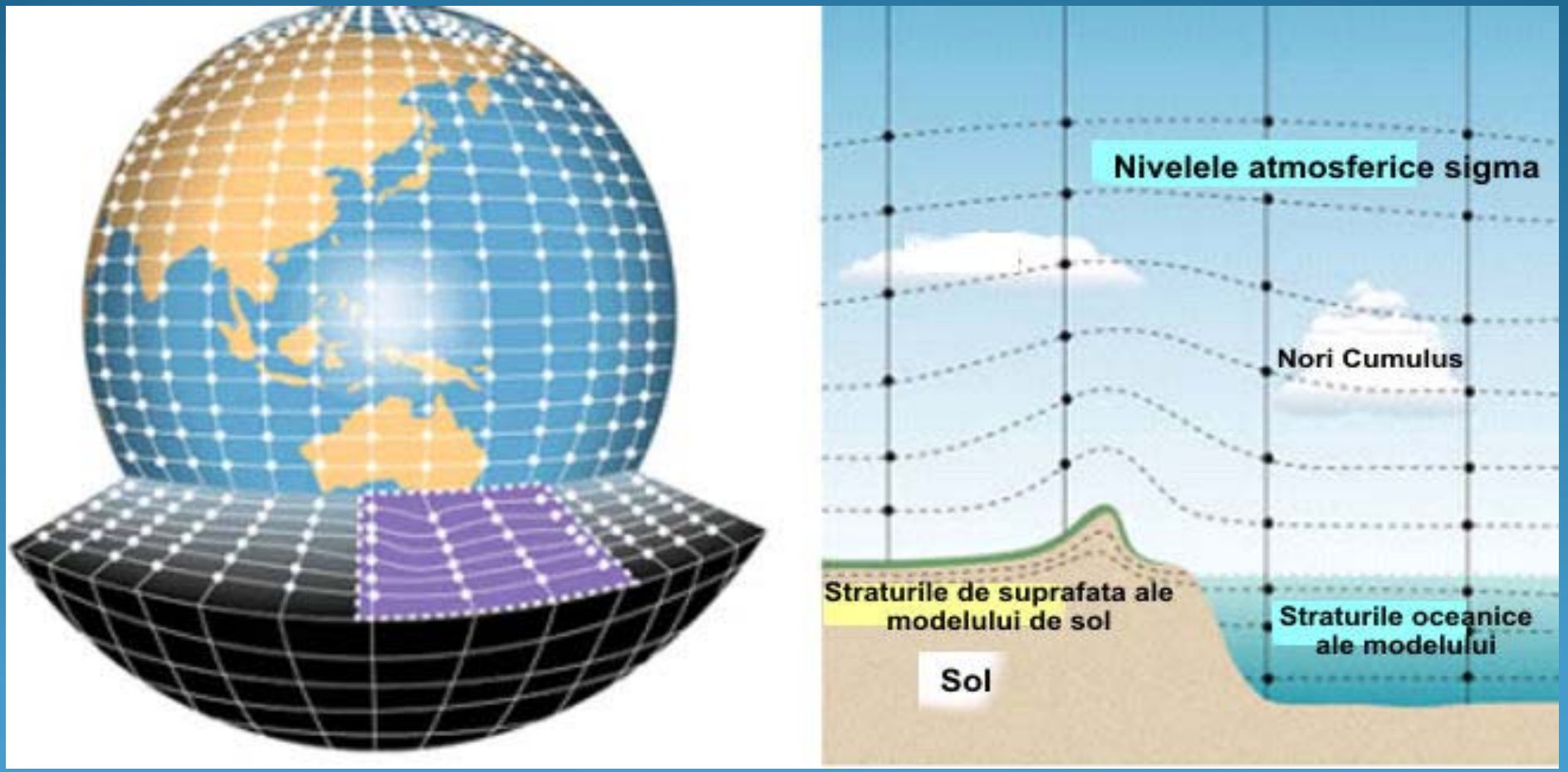
Climate projection results for Romania

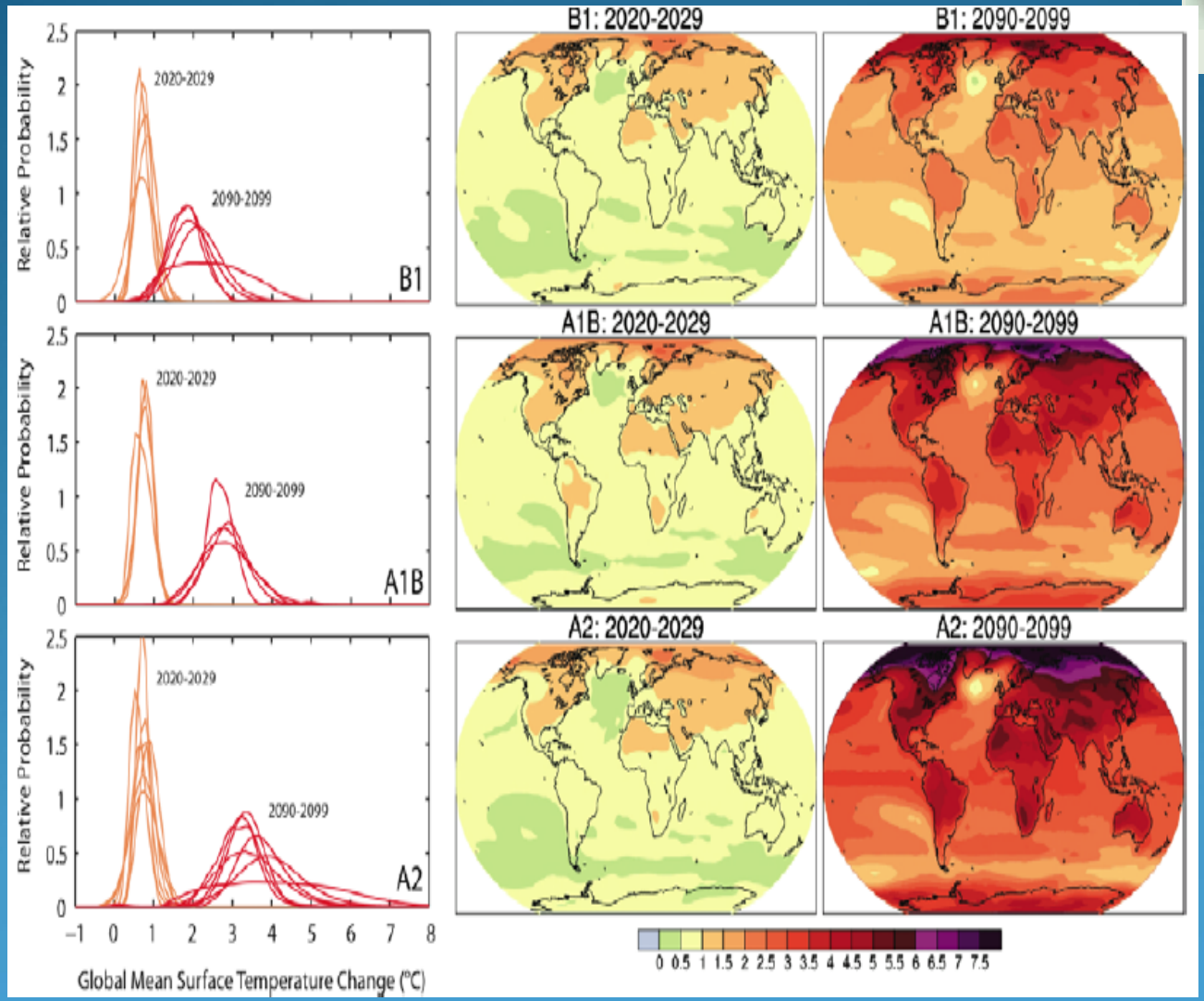
Administratia Nationala de Meteorologie

Global modelling



Global temperature projections

AR4 IPCC (2007)



WG I IPCC, 2007

GCMs used in the present analysis

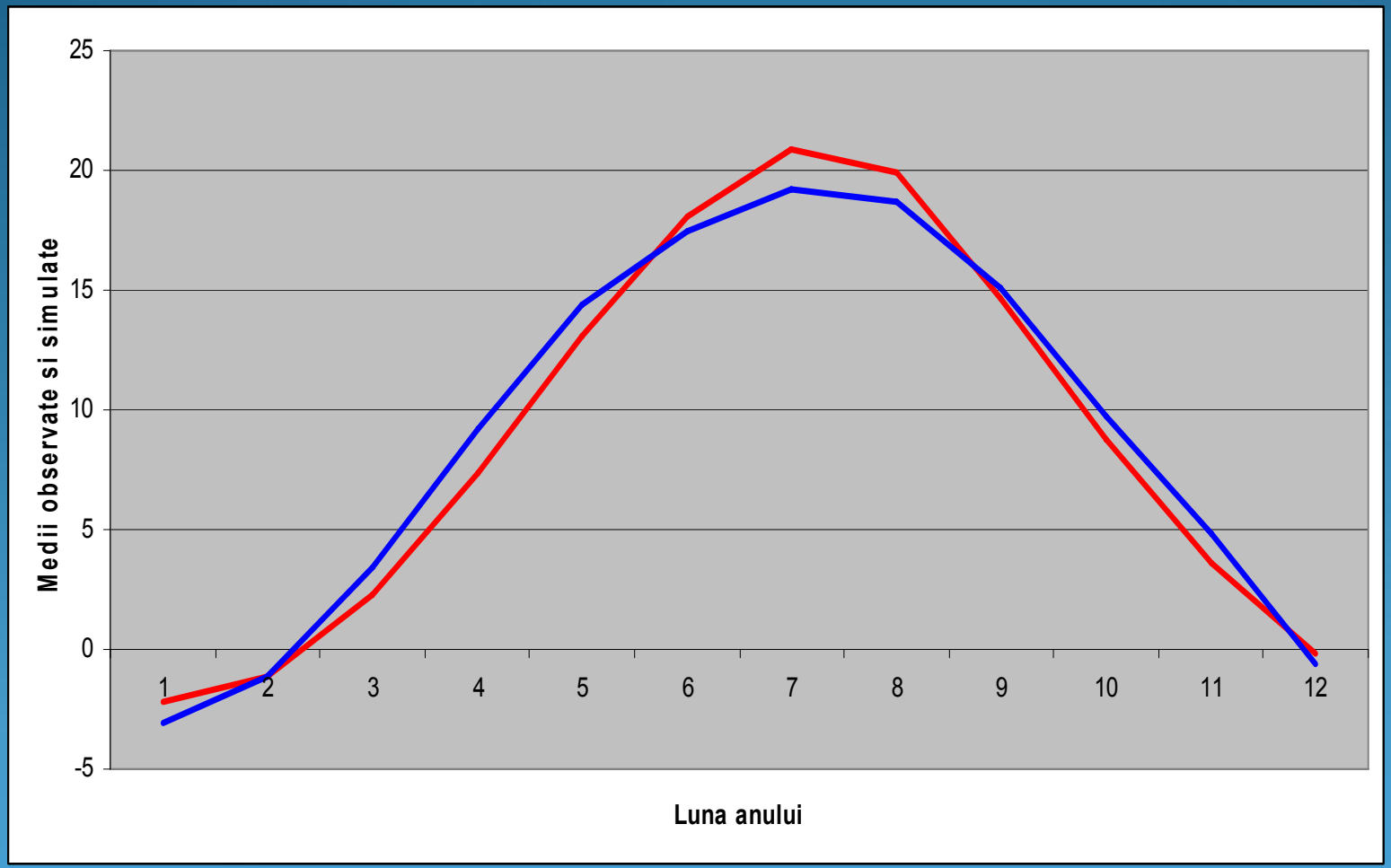
CMIP 3/PCMDI (The Program for Climate Model Diagnosis and Intercomparison)

1. CCCMA_3 (Canadian Centre for Climate Modelling and Analysis, Canada)
2. CNRM_CM3 (Météo-France, Franta)
3. CSIRO_MK3 (Commonwealth Scientific and Industrial Research Organisation, Australia)
4. GFDL_CM2_0 (Geophysical Fluid Dynamics Laboratory, SUA)
5. GFDL_CM2_1 (Geophysical Fluid Dynamics Laboratory, SUA)
6. GISS_AOM (The NASA Goddard Institute for Space Studies, SUA)
7. GISS_E_H (The NASA Goddard Institute for Space Studies, SUA)
8. IAP_FGOALS (Institute of Atmospheric Physics, China)
9. IPSL_CM4 (Institut Pierre Simon Laplace, Franta)
10. MIROC3_2_H (Center for Climate Systems Research, Japonia)
11. MIROC3_2_M (Center for Climate Systems Research, Japonia)
12. MIUB_ECHO_G (Meteorological Institute of the University of Bonn, Germania)
13. MPI_ECHAM5 (Max Planck Institute for Meteorology, Germania)
14. MRI_CGCM2 (Meteorological Research Institute, Japonia)
15. NCAR_CCSM (National Center for Atmospheric Research, SUA)
16. UKMO_HADGEM (Hadley Center for Climate and Prediction and Research, Marea Britanie)

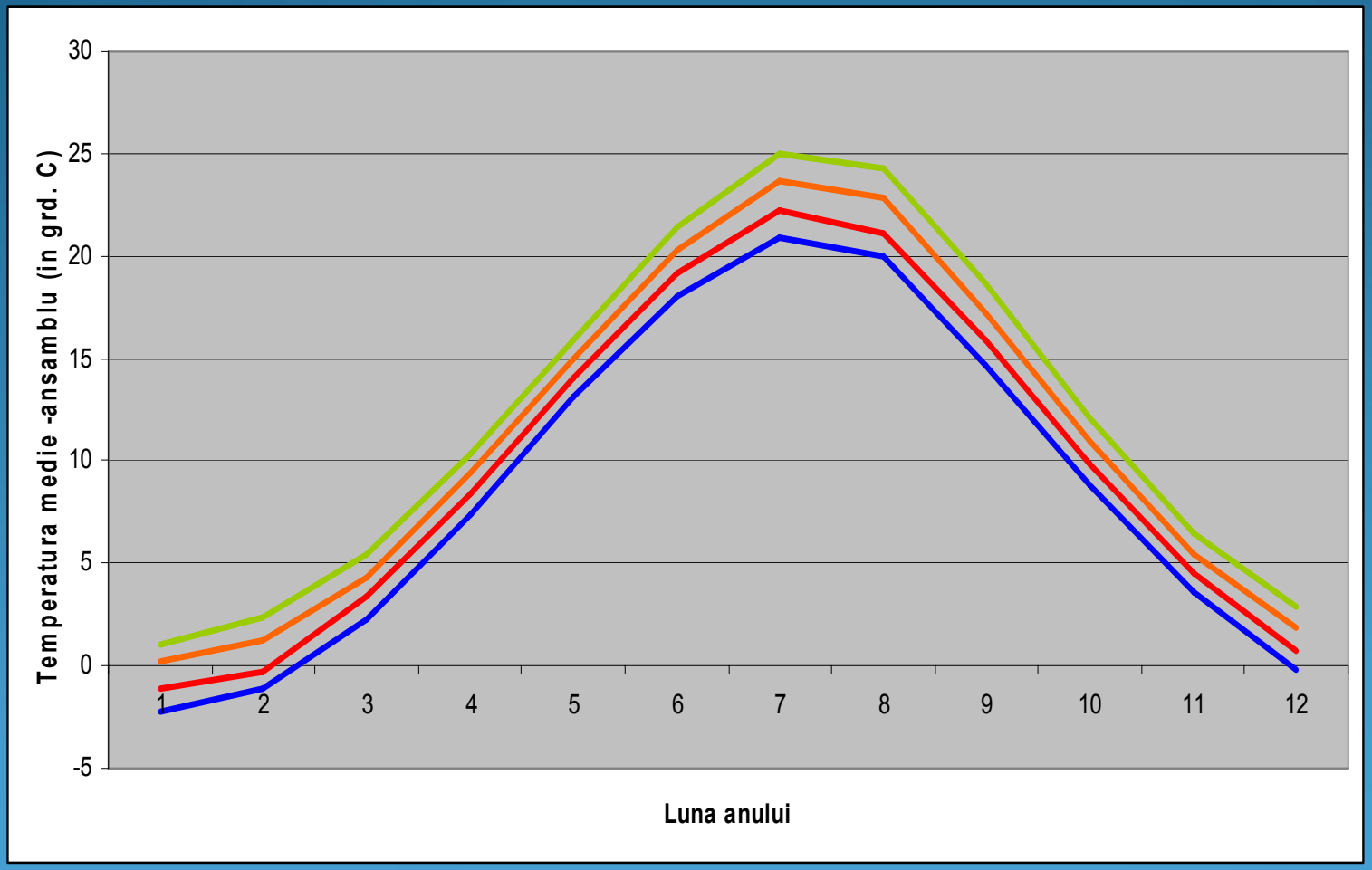
http://www-pcmdi.llnl.gov/ipcc/about_ipcc.php

Seasonal cycle of observd temperature (in ° C) (blue) and simulated (red) using 16 model-ansamble, A1B, present climate (1961-1990)

METEO ROMÂNIA

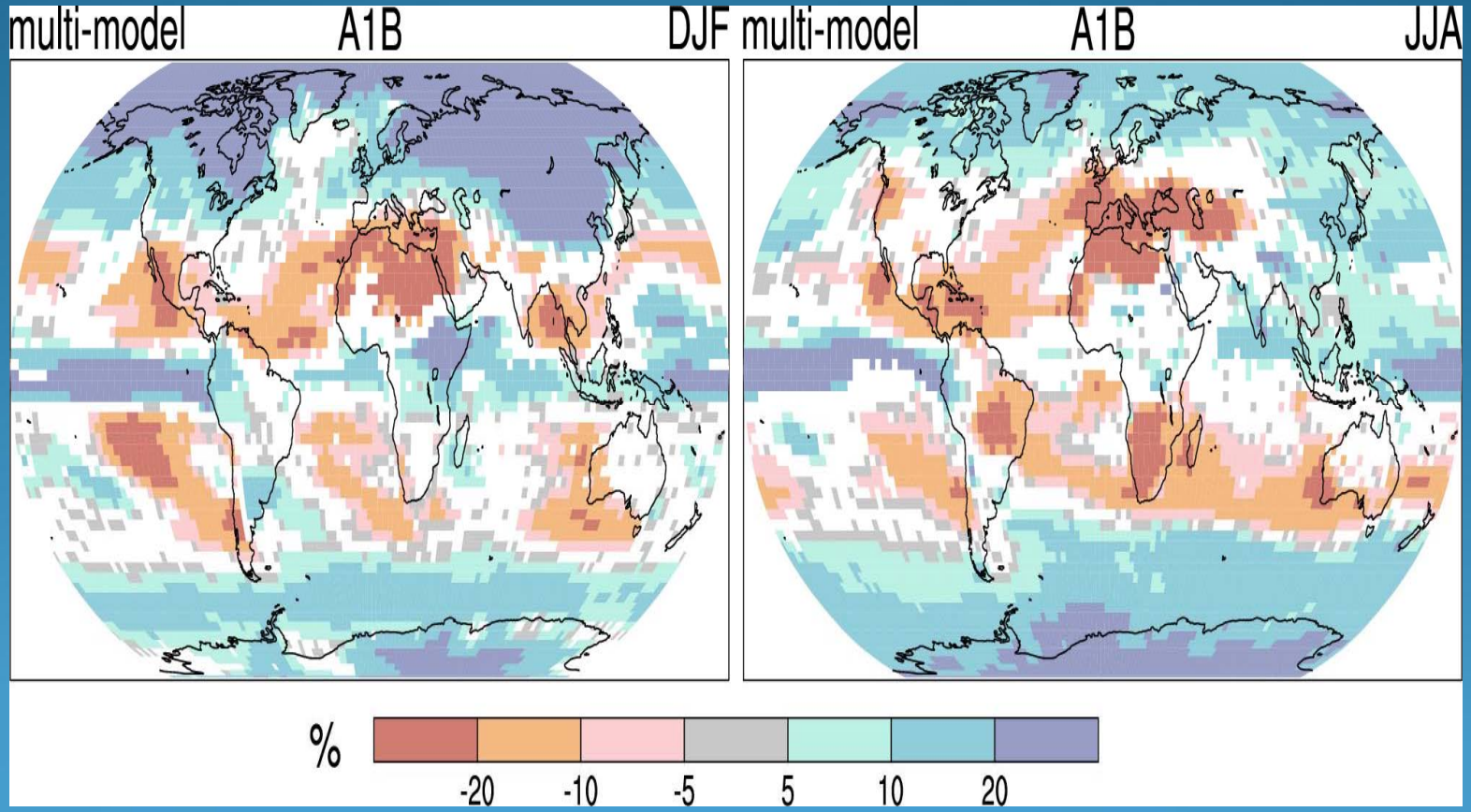


Seasonal cycle of projected temperature (in ° C) (blue) and simulated (red, orange and green) using 16 model-ansamble, A1B and present climate (1961-1990) (blue)



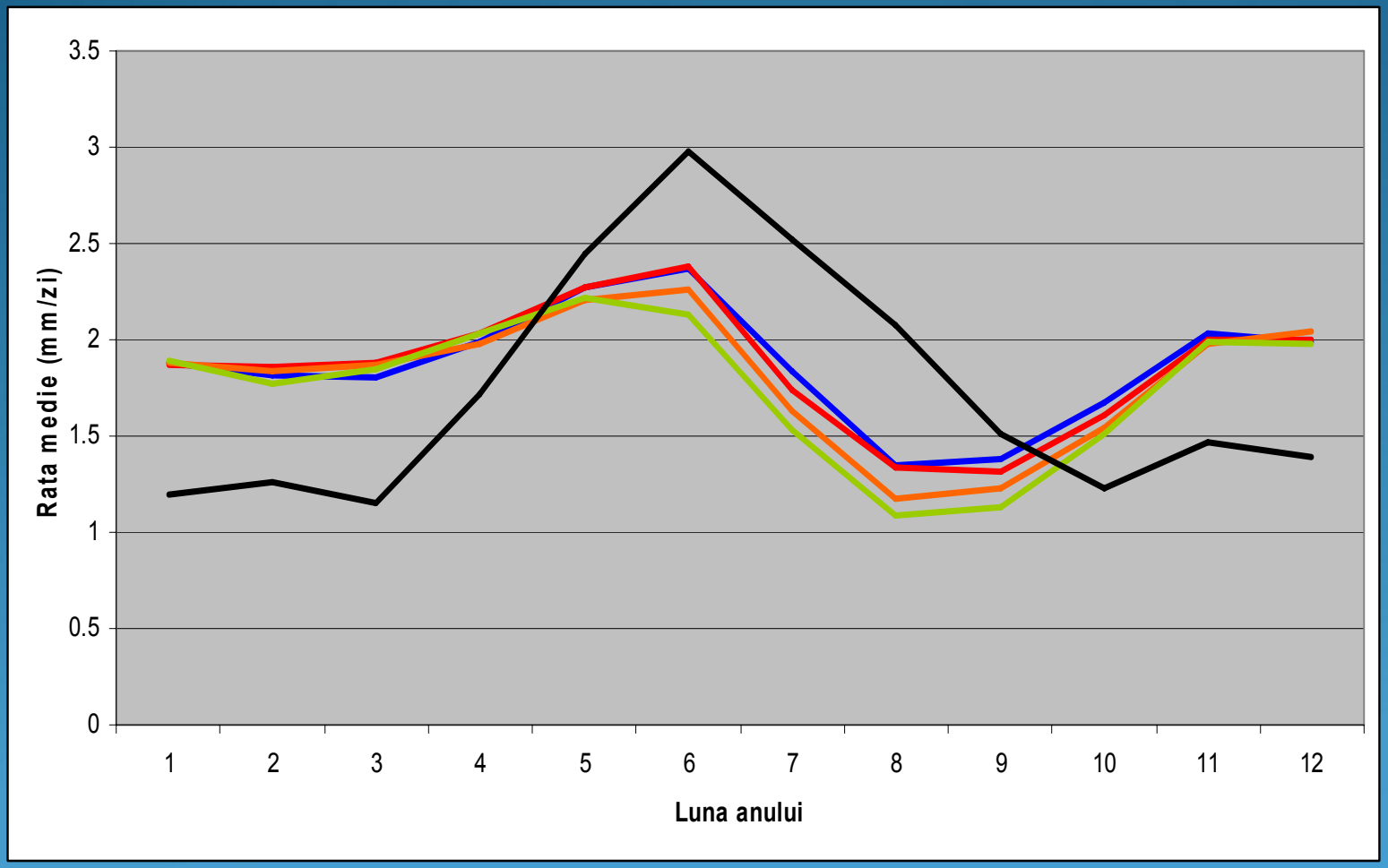
Global precipitation projections

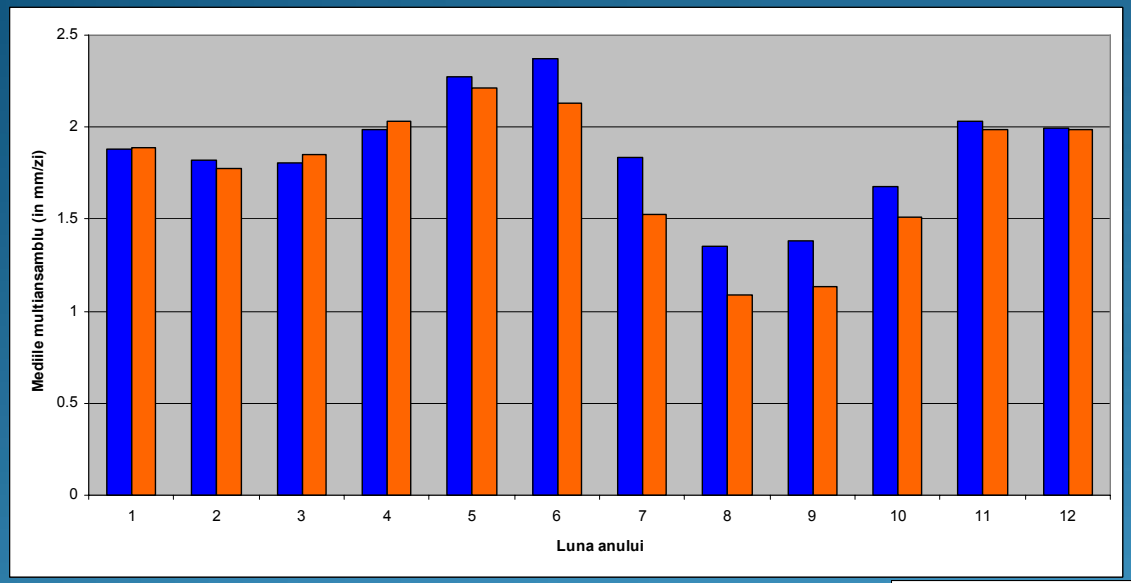
AR4 IPCC (2007)



WG I IPCC, 2007

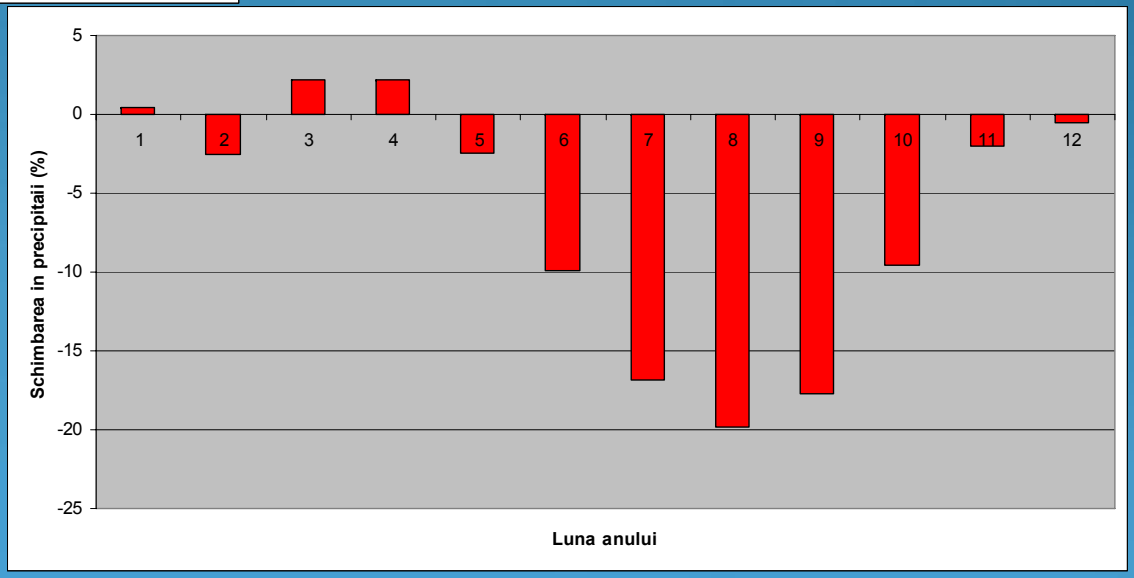
Observed (black) and simulated and projected seasonal cycle for precipitation (in mm/day) for the intervals 1961-1990, 2001-2030, 2031-2090). A1B scenario.



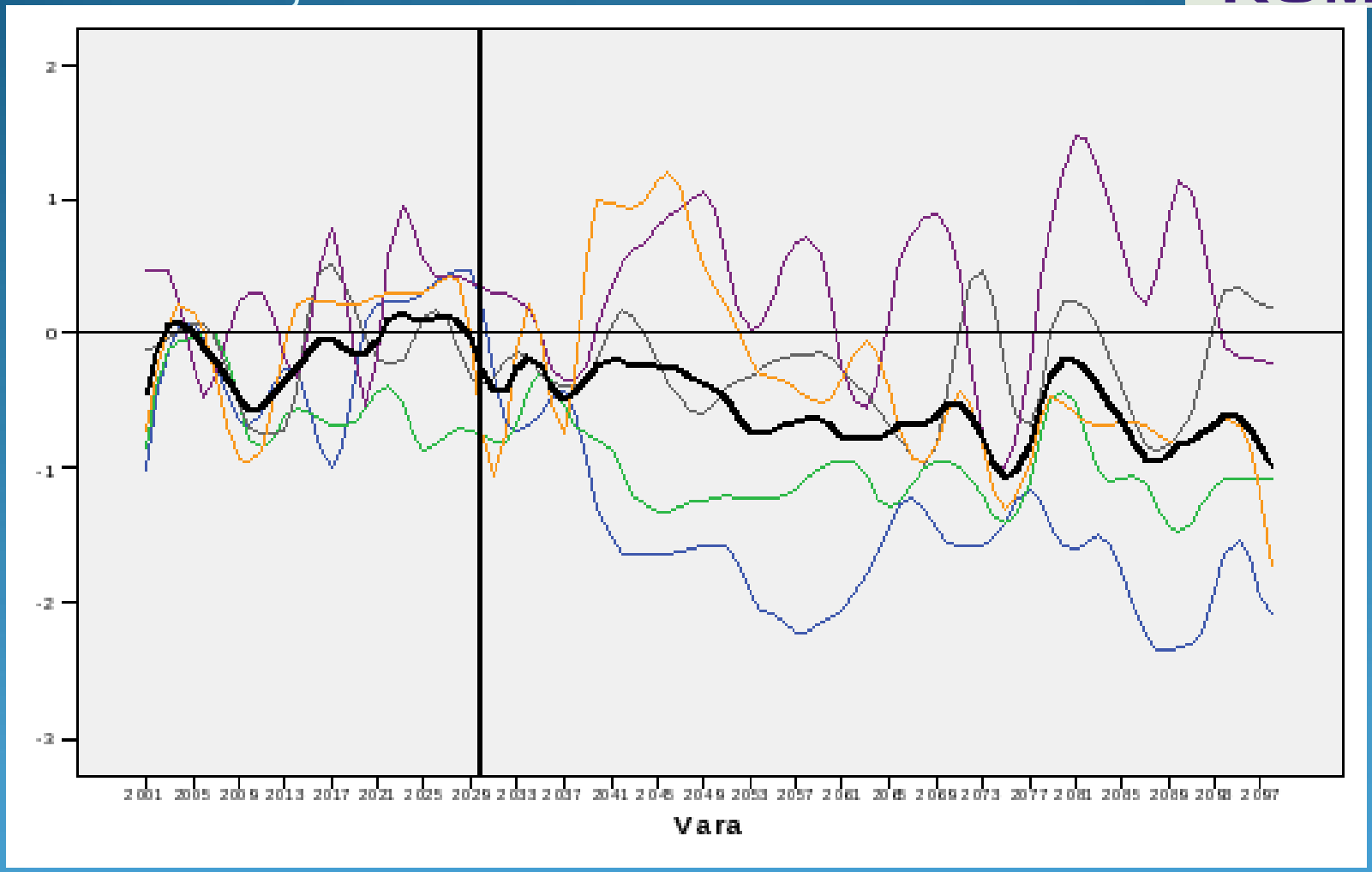


Seasonal cycle of projected precipitation for 2061-2090 (in mm/day) (blue) and simulated (orange) using 16 model-ansamble, A1B and present climate (1961-1990)

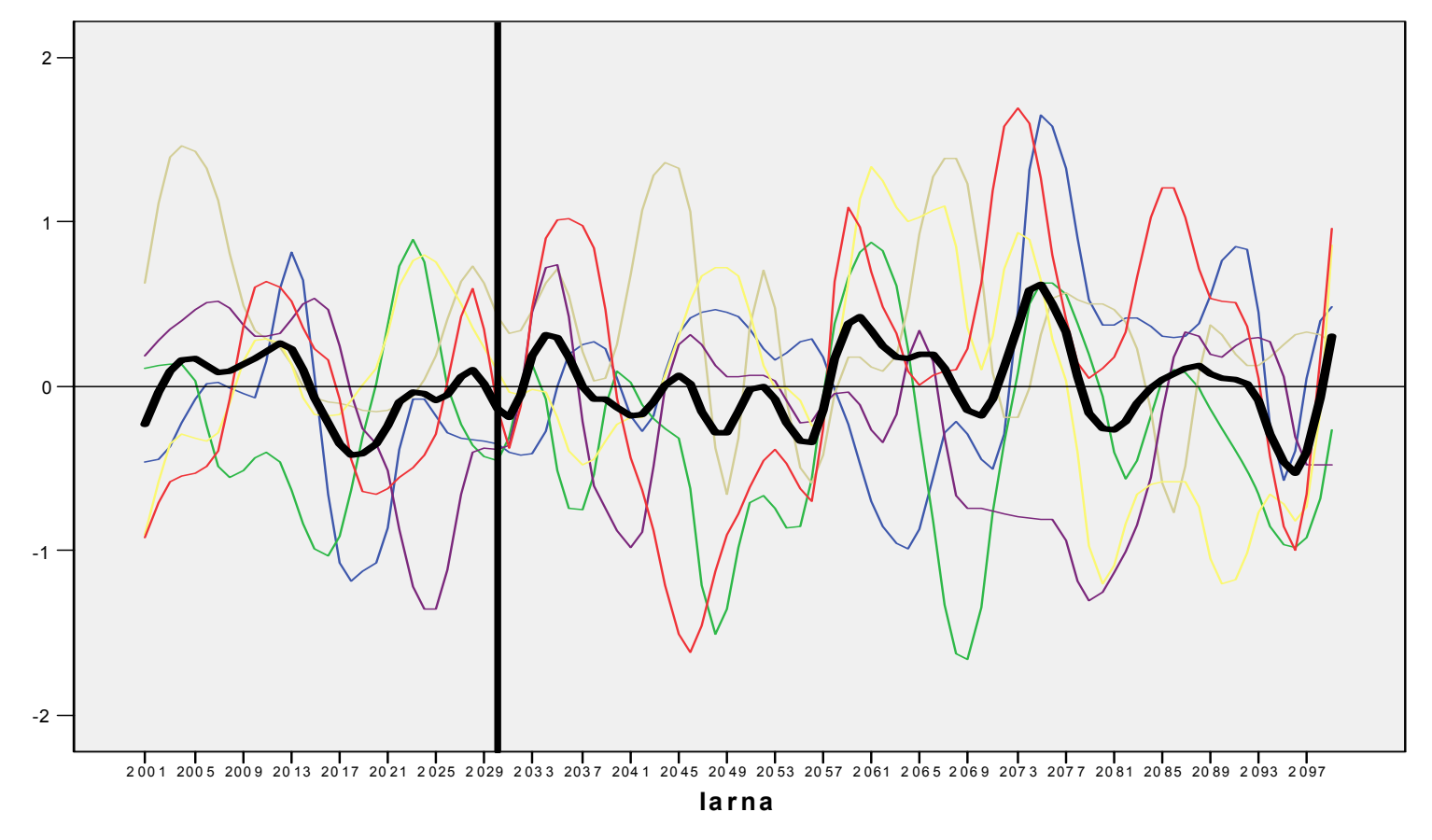
The anomaly difference in multimodel ansamble of 16 members for 2061-2090 şi 1961-1990, în cazul mediei lunare, averaged for Romanian territory (in %).



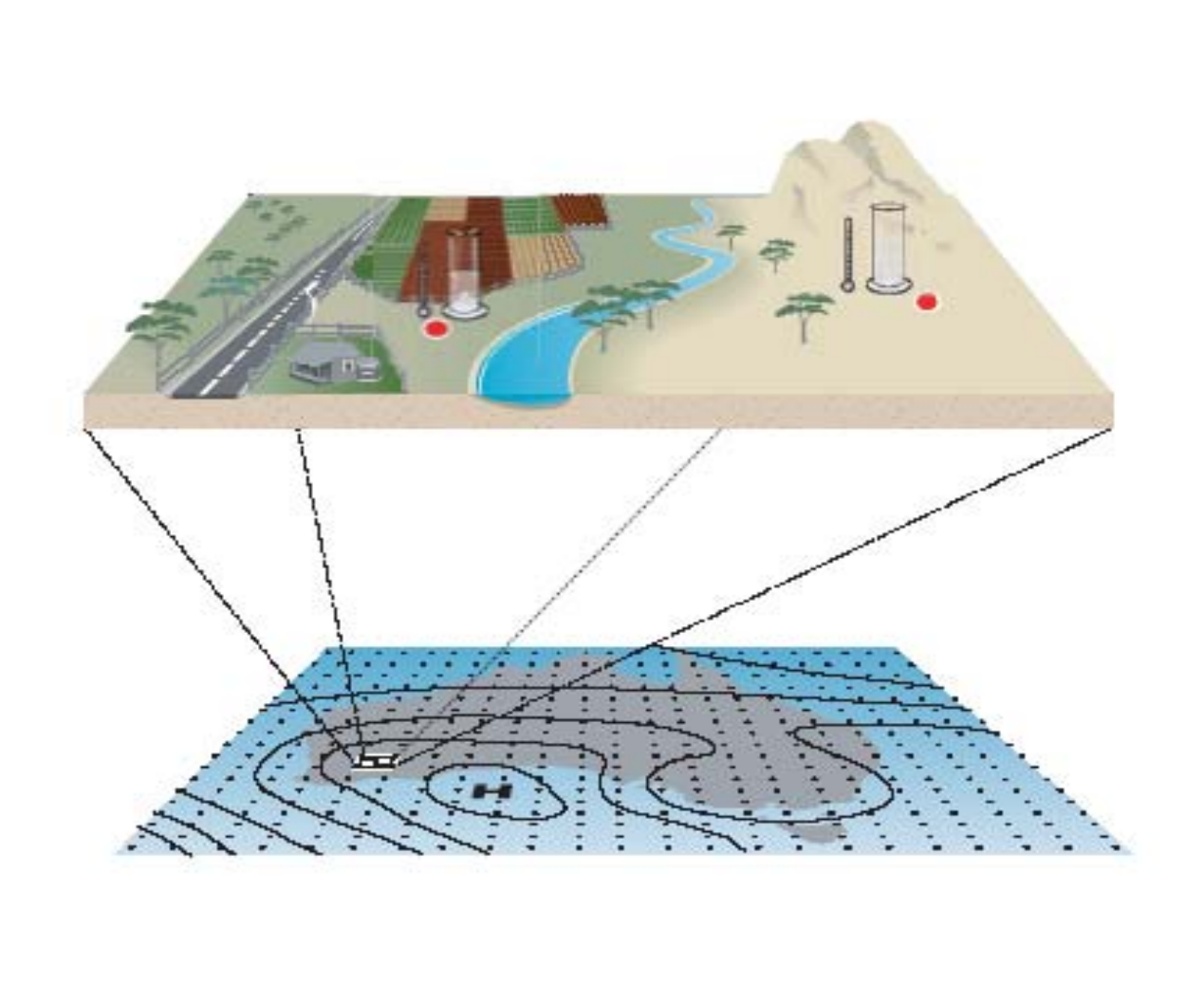
Sub-ensemble average evolution for Romanian precipitation - summer, A1B



Sub-ensemble average evolution for Romanian precipitation - winter, A1B



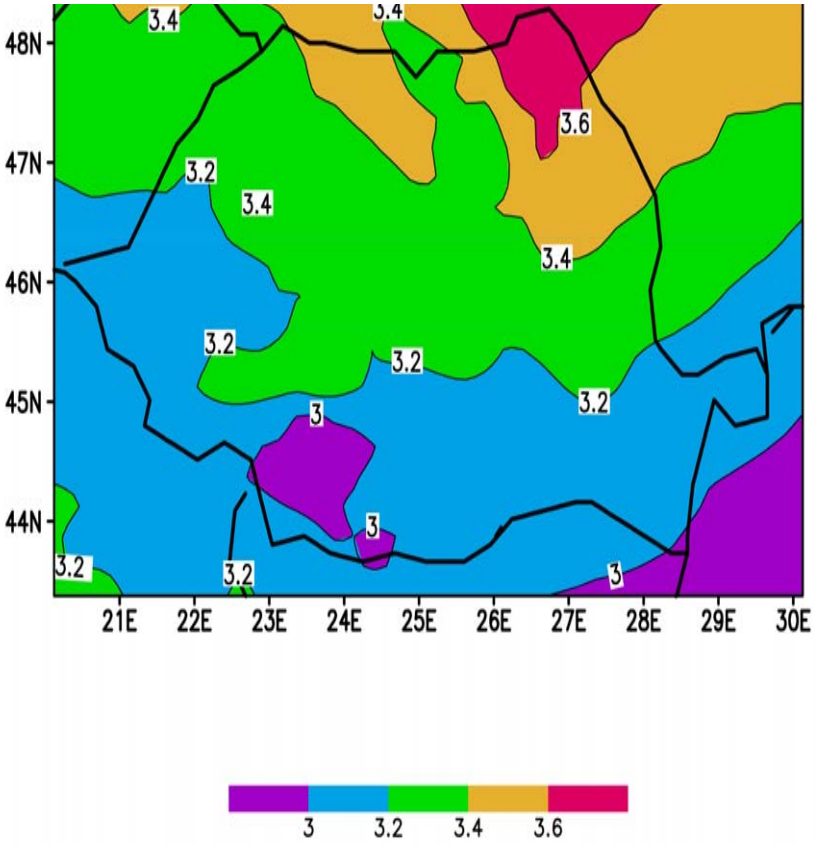
Regional modelling



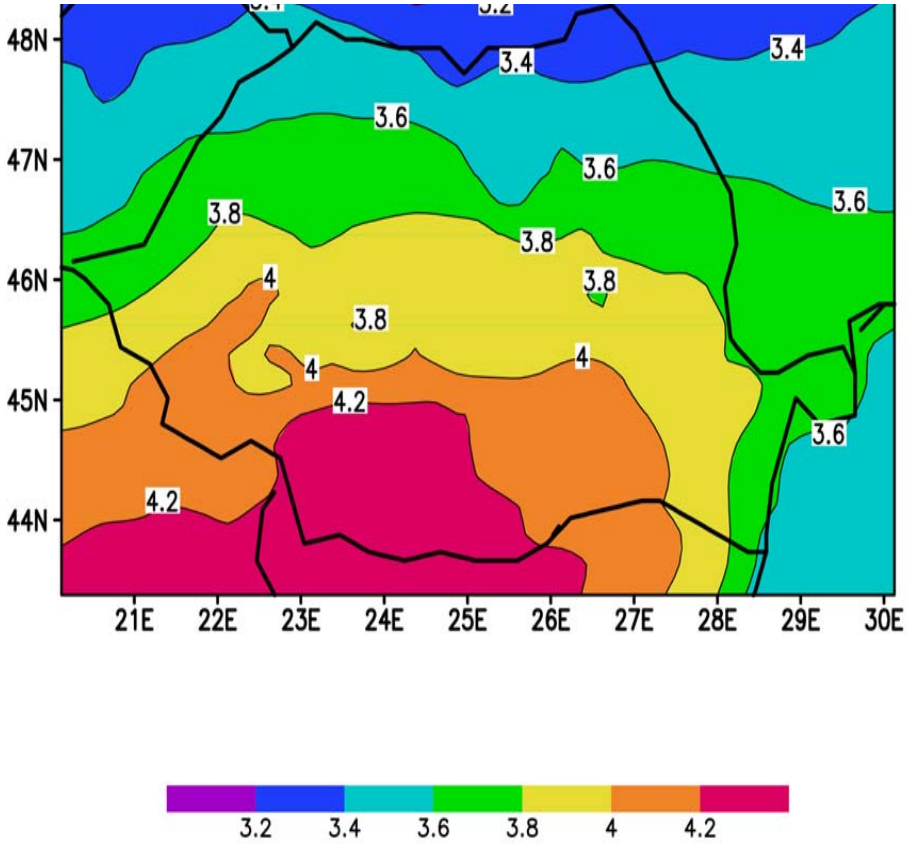
Regional changes in temperature: 7-member ensemble of regional models, 2070-2099 vs. 1961-1990, A1B

FP6 ENSEMBLE project

Winter

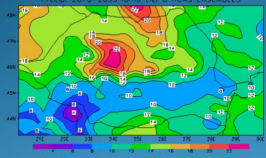


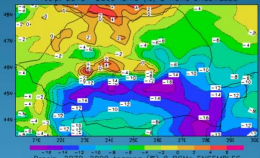
Summer

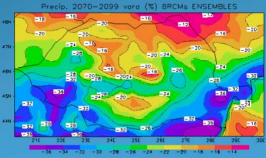


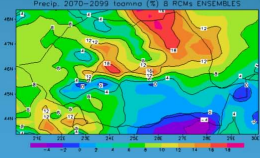
Regional changes in precipitation (%): 7-member ensemble of regional models, 2070-2099 vs. 1961-1990, A1B

FP6 ENSEMBLES project









Conclusions

- Larger uncertainties in projecting precipitation compared with temperature
- More regional experiments are needed in order to resolve the fine scales of the complex regional system (orography, Black Sea
- More regional studies are nedeed