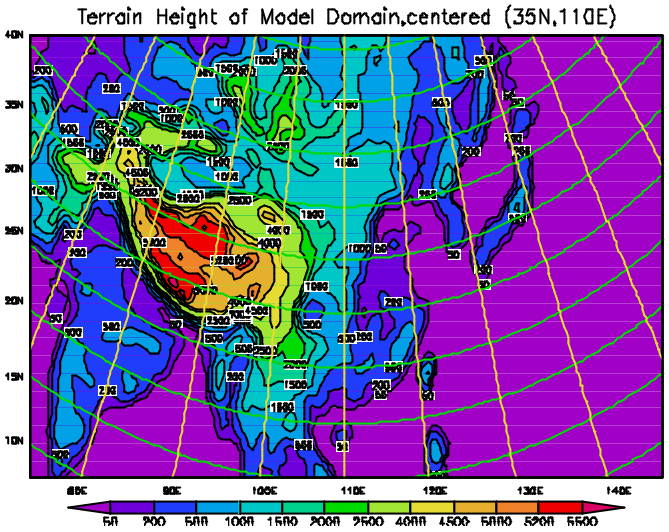
NCC Regional Climate Model

The Regional Climate Model in China National Climate Center (RegCM_NCC), one project result of the National Ninth Five Year Key Project "Studies on short-term climate prediction system for China", has been developed by improving/planting various physical process parameterization schemes based on the RegCM2/NCAR (1996 version). The comparisons of the physical process parameterization schemes between the two regional climate models are listed in Table 1.

The RegCM_NCC has been widely used over different regions with various purposes for both research and operational predictions. Results have shown that RegCM_NCC can well capture the characters and evaluations of the summer monsoon rain-belt.

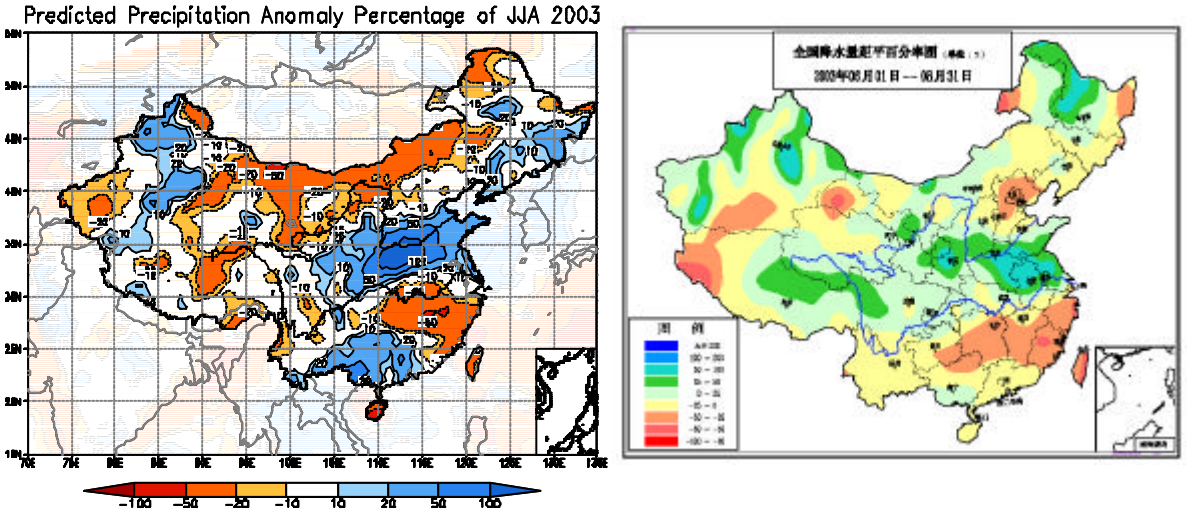
Table 1 Physical Process Parameterization Scheme Comparison

Physical process	Models	
	RegCM2	RegCM_NCC
Land-surface	BATS	BATS, LPM
Cumulus Convective	Kuo, Grell	Kuo, Grell Betts-Miller, MFS
Radiation Transfer	CCM2	CCM3
PBL	Hotslag	Hotslag, TKE
Terrain		Gravity wave drag， envelop terrain
Nesting	Two-dimensional nesting	2-D or 3-D nesting



Terrain Height of Regional Climate Model Domain (Unit: m)

Results of the model predictions and 10-year hindcasts have indicated that RegCM_NCC has certain capability in seasonal prediction. Especially in the summer (JJA) 2003, RegCM_NCC has successfully forecasted the abnormal heavy precipitation over the Huaihe River Valley.



Precipitation Anomaly Percentage (%) of JJA 2003

(Left: RegCM_NCC prediction, Right: Observation)