Impact of the Indian Ocean Dipole Mode and ENSO on the East Asia Monsoon: GME Model Experiments

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Recently, impact of Indian and Pacific Ocean on activity of East Asia Monsoon has been confirmed. According to Kripalani *et.al.*, (2010) peak positive phase of the dipole during autumn could suppress the following summer monsoon activity over East Asia three seasons later in particular over the Korea-Japan sector. Wang *et.al.*, (2000) states that the anomalous Philippine Sea anticyclone (PSAC) conveys impacts of El Nino to east Asian climate during the mature and decay of an El Nino. In this study, we attempt to examine the influence of the Indian Ocean Dipole and ENSO on East Asia Monsoon using the high resolution Global model GME, to identify the physical processes leading to the delayed impact. GME Model is based on uniform icosahedral-hexagonal grid which avoids the disadvantages of spectral techniques as well as the pole problem in latitude-longitude grids. Also it provides a data structure extremely well suited to high efficiency on distributed memory parallel

computers. The Model is being forced by the daily AMIPII SST anomalies for each case and each experiment is simulated in the 40km/40layer resolution for 2years. Result of these experiments will be presented at the conference.

First Year							
MAR	МАУ	JUN	AUG	SEP	NOV	DEC	FBB
0%		50%		100%		50% 1	
SST Climat	ningy Only	SST feeding(+ SST Climatol	1/2 1/2	SST fording	(- 1444)	SST forcing(- SST Climatol	ngy 1/2 1/2
Second Year							
MAR	MAY		AUG	SEP	NOV	DEC	FEB
0%		0%.		0%		0% 1	
SST Climatology Only		SST Climatology Only		SST Climatology Only		SST Climatology Only	

Keywords: IODM, ENSO, East-Asia Monsoon, GME Model

Figure 1 Schematic representation of design of numerical experiments for the positive IODM case

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