

Fig. 4 a-f Annual cycle climatology for rainfall rate averaged between $70^{\circ} \mathrm{E}-90^{\circ} \mathrm{E}$ from a GPCP, b CMAP, c MIROC5, $\mathbf{d}$ csiro-mk3.5, e CMIP5 MMM, and $\mathbf{f}$ CMIP3 MMM. Also given in b-f is the pattern correlation of the model with GPCP over the region $10^{\circ} \mathrm{S}-30^{\circ} \mathrm{N}$, for May-September (the dashed region in a). The units are ( mm day $^{-1}$ ). g Models stratified by their pattern correlation with GPCP. GPCP and CMAP data are from 1979-2007 and the model data is from 1961-1999

GPCP (1979-2007)



CMIP5 MMM


CMIP3 MMM


## BCC-CSM-1


bccr-bem2.0


## CanESM2





## CCSM4





## CNRM-CM5




CSIRO-Mk3.6.0




FGOALS-g2


FGOALS-s2

fgoals-g1.0


GFDL-CM3


GFDL-ESM2G


GFDL-ESM2M

gfdl-cm 2.0

gfdl-cm2.1


GISS-E2-H


GISS-E2-R



## HadCM3



HadGEM2-CC


HadGEM2-ES

ukmo-hadcm3

ukmo-hadgem1



INM-CM4



## IPSL-CM5A-LR



## IPSL-CM5A-MR



## ipsl-cm4



MIROC-ESM


## MIROC-ESM-CHEM



## MIROC4h



## MIROC5


miroc3.2 (hires)



MPI-ESM-LR




## MRI-CGCM3


mri-cgem2.3.2


NorESM1-M


