

(a) u DJF 30 hPa 60° N

NCEP-DOE R2	11.0												
CFSR	0.9	11.3											
MERRA	0.9	0.4	11.3										
MERRA-2	0.9	0.4	0.2	11.4									
ERA-Interim	0.9	0.5	0.5	0.5	11.2								
JRA-25	0.9	0.6	0.6	0.6	0.6	11.2							
JRA-55C	0.9	0.6	0.6	0.6	0.5	0.5	11.2						
JRA-55	0.9	0.5	0.4	0.4	0.4	0.5	0.4	11.3	1.0	2.4	9.0	9.0	
ERA-40	1.1	0.9	0.8	0.8	0.7	0.8	0.7	0.7	10.8	2.5	9.0	9.0	
NCEP-NCAR R1	0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.2	11.0	8.7	8.8	
20CR v2	10.3	10.5	10.5	10.2	10.4	10.4	10.4	10.5	9.6	10.2	7.3	8.4	
ERA-20C	7.0	7.1	7.1	7.1	7.1	7.0	7.0	7.1	6.2	6.9	8.6	10.2	
	NCEP-DOE R2	CFSR	MERRA	MERRA-2	ERA-Interim	JRA-25	JRA-55C	JRA-55	ERA-40	NCEP-NCAR R1	20CR v2	ERA-20C	

(b) u JJA 30 hPa 60° S

NCEP-DOE R2	4.5												
CFSR	1.7	4.6											
MERRA	1.7	0.7	4.6										
MERRA-2	1.7	0.6	0.5	4.4									
ERA-Interim	1.7	0.8	0.6	0.6	4.5								
JRA-25	1.7	1.5	1.3	1.3	1.2	4.8							
JRA-55C	2.5	2.3	2.2	2.1	2.2	2.3	4.5						
JRA-55	1.7	1.0	0.8	0.7	0.7	1.2	2.1	4.5	5.5	4.6	5.9	5.6	
ERA-40	2.0	1.5	1.2	1.2	1.0	1.6	2.4	1.1	4.5	5.7	6.0	6.3	
NCEP-NCAR R1	1.0	1.8	1.7	1.7	1.8	1.7	2.5	1.7	2.1	4.8	6.0	5.5	
20CR v2	4.6	4.4	4.4	4.4	4.4	4.4	4.5	4.4	4.6	4.8	4.0	5.8	
ERA-20C	4.4	4.1	4.1	4.2	4.2	4.3	4.1	4.2	4.4	4.5	4.5	4.6	
	NCEP-DOE R2	CFSR	MERRA	MERRA-2	ERA-Interim	JRA-25	JRA-55C	JRA-55	ERA-40	NCEP-NCAR R1	20CR v2	ERA-20C	

(c) u DJF 500 hPa 40-50° N

NCEP-DOE R2	2.8												
CFSR	0.3	2.8											
MERRA	0.3	0.2	2.8										
MERRA-2	0.3	0.2	0.2	2.8									
ERA-Interim	0.3	0.2	0.2	0.2	2.8								
JRA-25	0.2	0.2	0.2	0.2	0.2	2.8							
JRA-55C	0.3	0.3	0.3	0.2	0.2	0.2	2.8						
JRA-55	0.3	0.2	0.2	0.2	0.2	0.2	2.8	0.3	0.3	0.7	0.6		
ERA-40	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.2	2.8	0.4	0.7	0.6	
NCEP-NCAR R1	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.3	2.8	0.8	0.6	
20CR v2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	2.7	0.7	
ERA-20C	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	2.8	
	NCEP-DOE R2	CFSR	MERRA	MERRA-2	ERA-Interim	JRA-25	JRA-55C	JRA-55	ERA-40	NCEP-NCAR R1	20CR v2	ERA-20C	

(d) u JJA 500 hPa 40-50° S

NCEP-DOE R2	2.4												
CFSR	0.7	2.6											
MERRA	0.6	0.4	2.6										
MERRA-2	0.7	0.3	0.3	2.6									
ERA-Interim	0.6	0.3	0.4	0.3	2.6								
JRA-25	0.7	0.5	0.6	0.5	0.5	2.5							
JRA-55C	1.4	1.5	1.5	1.4	1.4	1.5	2.5						
JRA-55	0.6	0.4	0.5	0.4	0.4	0.6	1.4	2.6	2.5	2.5	2.4	2.8	
ERA-40	0.6	0.4	0.4	0.4	0.4	0.6	1.6	0.5	2.6	2.3	2.2	2.7	
NCEP-NCAR R1	0.3	0.6	0.6	0.6	0.6	0.7	1.4	0.6	0.7	2.5	1.8	2.4	
20CR v2	1.0	0.9	0.9	0.9	0.9	0.9	1.5	0.9	1.0	0.9	2.5	2.2	
ERA-20C	1.4	1.4	1.4	1.4	1.4	1.4	1.7	1.4	1.6	1.4	1.3	2.4	
	NCEP-DOE R2	CFSR	MERRA	MERRA-2	ERA-Interim	JRA-25	JRA-55C	JRA-55	ERA-40	NCEP-NCAR R1	20CR v2	ERA-20C	