Supporting Information for "High-resolution regional climate model evaluation using variable-resolution CESM over California"

Contents of this file

- 1. Figures S1 to Sx
- 2. Tables S1 to S4

Additional Supporting Information (Files uploaded separately)

- 1. VR-CESM 0.25° grid mesh file
- 2. VR-CESM 0.125° grid mesh file

Introduction

This supporting information includes:

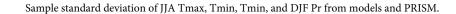
- 1) The original grid-refined mesh files for implementing the variable-resolution cubed-sphere grids, which can be used by other scientists working in the field;
- 2) The interannual variability plots of mean T_{max} , T_{min} , T_{avg} and Pr in simulations and PRISM over 5, 10, 20 and 25 seasons or years respectively, which show that our simulation period from year 1980-2005 is appropriate for the regional climatology studies in this paper;
- 3) The time trend result figures of T_{max} , T_{min} , T_{avg} and Pr in models and PRISM over year 1980-2005, including probability for a statistically significant trend under the two-tailed t-statistic with a significance level of 0.05 and the magnitude of the linear trend fit coefficients;
- 4) Plots of other seasons for T_{max} , T_{min} , and T_{avg} not addressed in this paper and statistics metric tables of other seasons over our simulation period;
- 5) Result figures together with the output from a globally uniform CESM run at 0.25° spatial resolution with the finite volume (FV) dynamical core [Wehner et al., 2014].

 $\begin{array}{c} {\rm VR\text{-}CESM}~0.25^{\circ}~{\rm grid~mesh~file} \\ {\rm VR\text{-}CESM}~0.125^{\circ}~{\rm grid~mesh~file} \end{array}$

A. Gettelman, and C. Jablonowski (2014), The effect of horizontal resolution on simulation quality in the Community Atmospheric Model, CAM5.1, *J. Model. Earth. Sys.*, doi: 10.1002/2013 MS000276.

References

Wehner, M. F., K. Reed, F. Li, Prabhat, J. Bacmeister, C.-T. Chen, C. Paciorek, P. Gleckler, K. Sperber, W. D. Collins,



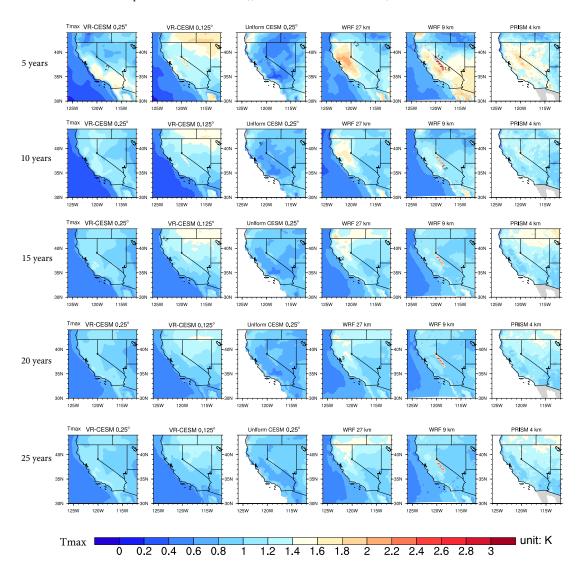


Figure S1. Sample standard deviation of JJA T_{max} , T_{min} , T_{avg} and DJF Pr from models and PRISM with 5 year step from year 1980.

 $\begin{tabular}{ll} \textbf{Table S1.} & RMSD ($^\circ$C), MSD ($^\circ$C) and Spatial Correlation (Corr) for seasonally-averaged MAM (March-April-May) temperature over California$

RMSD	$\mathbf{U}\mathbf{W}$		J	PRISM	Daymet		
	T_{max}	T_{min}	T_{max}	T_{min}	T_{avg}	T_{max}	T_{min}
$\overline{ ext{VR-CESM 0.25}^{\circ}}$	1.776	2.212	2.297	2.164	2.033	2.344	2.686
$ m VR\text{-}CESM~0.125^{\circ}$	1.727	1.841	2.145	1.883	1.908	2.214	2.287
WRF 27km	1.945	2.062	2.433	1.863	1.991	2.366	2.541
WRF 9km	3.114	2.065	3.060	1.568	1.801	2.969	2.293
Uniform CESM 0.25°	2.680	2.112	3.059	2.404	2.674	3.099	2.631

MAD	UW			PRISM	I	Daymet	
	T_{max}	T_{min}	T_{max}	T_{min}	T_{avg}	T_{max}	T_{min}
$\overline{ ext{VR-CESM 0.25}^{\circ}}$	-0.859	1.308	-0.813	0.681	-0.819	-0.608	1.350
$ ext{VR-CESM } 0.125^{\circ}$	-1.261	0.983	-1.274	0.328	-1.202	-1.052	0.952
WRF 27km	-1.066	0.745	-1.020	0.117	-0.942	-0.818	0.788
\mathbf{WRF} 9 \mathbf{km}	-2.516	1.259	-2.530	0.604	-1.312	-2.305	1.227
Uniform CESM 0.25°	-1.191	0.417	-1.139	-0.212	-1.398	-0.938	0.458

Corr	$\mathbf{U}\mathbf{W}$]	PRISM	I	Daymet	
	T_{max}	T_{min}	T_{max}	T_{min}	T_{avg}	T_{max}	T_{min}
$\overline{ ext{VR-CESM 0.25}^{\circ}}$	0.997	0.963	0.995	0.963	0.990	0.994	0.942
$\text{VR-CESM 0.125}^{\circ}$	0.998	0.975	0.996	0.972	0.993	0.995	0.959
WRF 27km	0.996	0.959	0.994	0.968	0.991	0.994	0.937
\mathbf{WRF} 9km	0.993	0.971	0.994	0.983	0.994	0.993	0.962
Uniform CESM 0.25°	0.993	0.960	0.990	0.949	0.984	0.989	0.938

Table S2. RMSD (°C), MSD (°C) and Spatial Correlation (Corr) for seasonally-averaged SON (Sept.-Oct.-Nov.) temperature over California.

RMSD	$\mathbf{U}\mathbf{W}$]	PRISM	I	Daymet	
	T_{max}	T_{min}	T_{max}	T_{min}	T_{avg}	T_{max}	T_{min}
$\overline{ ext{VR-CESM 0.25}^{\circ}}$	1.591	3.866	2.065	2.788	1.777	2.088	3.837
$ ext{VR-CESM } 0.125^{\circ}$	1.212	3.906	1.652	2.851	1.524	1.900	3.797
WRF 27km	1.665	3.022	2.111	1.784	1.663	2.059	3.060
WRF 9km	2.262	3.788	2.574	2.322	1.285	2.402	3.615
uniform CESM 0.25°	2.605	3.344	2.970	2.789	2.464	2.999	3.444

MAD	$\mathbf{U}\mathbf{W}$]	PRISM	Daymet		
	T_{max}	T_{min}	T_{max}	T_{min}	T_{avg}	T_{max}	T_{min}
$\overline{ ext{VR-CESM 0.25}^{\circ}}$	0.122	3.303	-0.353	1.766	-0.240	0.102	3.063
$ ext{VR-CESM} \; 0.125^{\circ}$	0.394	3.439	-0.126	1.908	-0.048	0.353	3.134
WRF 27km	0.181	2.044	-0.295	0.507	-0.739	0.158	1.807
\mathbf{WRF} 9km	-1.412	3.310	-1.931	1.779	-0.673	-1.451	3.004
uniform CESM 0.25°	-0.187	2.415	-0.655	0.877	-0.826	-0.205	2.175

Corr	$\mathbf{U}\mathbf{W}$		J	PRISM	[Daymet	
	T_{max}	T_{min}	T_{max}	T_{min}	T_{avg}	T_{max}	T_{min}
$\overline{ ext{VR-CESM 0.25}^{\circ}}$	0.998	0.950	0.996	0.975	0.994	0.996	0.951
$ m VR\text{-}CESM~0.125^{\circ}$	0.999	0.957	0.998	0.978	0.996	0.997	0.961
WRF 27km	0.997	0.949	0.996	0.982	0.995	0.996	0.948
WRF 9km	0.996	0.953	0.996	0.986	0.997	0.996	0.959
uniform CESM 0.25°	0.993	0.956	0.992	0.965	0.989	0.991	0.952

 $\textbf{Table S3.} \ \text{RMSD } (^{\circ}C), \ \text{MSD } (^{\circ}C) \ \text{and Spatial Correlation (Corr) for seasonally-averaged DJF temperature over California.}$

RMSD	$\mathbf{U}\mathbf{W}$]	PRISM	I	Daymet	
	T_{max}	T_{min}	T_{max}	T_{min}	T_{avg}	T_{max}	T_{min}
$\overline{ ext{VR-CESM 0.25}^{\circ}}$	1.959	2.751	2.196	2.015	1.742	2.253	2.700
$ ext{VR-CESM} \; 0.125^{\circ}$	1.633	2.302	2.035	1.840	1.747	2.089	2.318
WRF 27km	1.699	2.756	2.106	1.734	1.537	2.033	2.665
\mathbf{WRF} 9km	1.876	2.753	2.324	1.865	1.324	2.169	2.625
uniform CESM 0.25°	2.979	2.072	3.339	2.500	3.211	3.310	2.408

MAD	$\mathbf{U}\mathbf{W}$]	PRISM	I	Daymet		
	T_{max}	T_{min}	T_{max}	T_{min}	T_{avg}	T_{max}	T_{min}	
$\overline{ ext{VR-CESM 0.25}^{\circ}}$	-0.549	2.108	-0.984	0.977	-0.920	-0.774	1.836	
$ ext{VR-CESM} \; 0.125^{\circ}$	-0.723	1.678	-1.178	0.541	-1.202	-0.978	1.345	
WRF 27km	-0.075	2.027	-0.510	0.895	-0.620	-0.302	1.759	
\mathbf{WRF} 9km	-1.049	2.214	-1.504	1.077	-0.594	-1.301	1.880	
uniform CESM 0.25°	-1.862	-0.010	-2.293	-1.142	-2.616	-2.085	-0.280	

Corr	$\mathbf{U}\mathbf{W}$]	PRISM	I	Daymet	
	T_{max}	T_{min}	T_{max}	T_{min}	T_{avg}	T_{max}	T_{min}
$\overline{ ext{VR-CESM 0.25}^{\circ}}$	0.989	0.856	0.988	0.925	0.978	0.987	0.856
$ ext{VR-CESM } 0.125^{\circ}$	0.993	0.900	0.991	0.941	0.979	0.989	0.898
WRF 27km	0.992	0.842	0.987	0.931	0.982	0.988	0.838
\mathbf{WRF} 9km	0.990	0.859	0.987	0.942	0.987	0.988	0.870
uniform CESM 0.25°	0.980	0.922	0.977	0.885	0.926	0.976	0.893

Table S4. RMSD (mm/day), MSD (mm/d), MRD, Spatial Correlation (Corr) for averaged precipitation over California

VR-CESM 0.25° 0.542 0.279 0.264 0.881 0.889 0.193 0.265 0.998 VR-CESM 0.125° 0.542 0.291 0.267 0.999 0.579 0.217 0.263 0.970 WRF 27km 0.448 -0.183 0.209 0.975 0.587 -0.269 0.234 0.970 WRF 9km 2.143 1.370 0.881 0.966 1.991 1.295 0.783 0.971 MAM PRISW	MAM		CI	PC			U	W	
VR-CESM 0.125° 0.554 0.291 0.267 0.979 0.579 0.217 0.263 0.970 WRF 9km 0.448 -0.183 0.209 0.891 0.991 1.295 0.234 0.971 minform CESM 0.25° 0.601 0.182 0.254 0.971 0.611 0.096 0.259 0.964 MAM PRIS WAS 0.818 0.254 0.971 0.611 0.096 0.253 0.961 WARD CERSIO 0.25° 0.642 0.279 0.264 0.981 0.589 0.193 0.655 0.965 0.965 0.965 0.965 0.965 0.965 0.965 0.269 0.970 0.871 0.060 0.970 0.871 0.060 0.269 0.971 0.060 0.269 0.972 0.060 0.269 0.972 0.060 0.060 0.080 0.060 0.072 0.072 0.072 0.072 0.072 0.072 0.072 0.072 0.072 0.072 0.072 0.072		RMSD	MAD	MRD	Corr	RMSD	MAD	MRD	Corr
WRF 27km 0.448 0.148 0.139 0.290 0.975 0.587 0.269 0.234 0.970 WRF 9km 0.182 0.182 0.961 0.961 1.295 0.753 0.971 MAM PRIST 0.0191 0.201 0.252 0.271 0.617 0.081 0.295 0.594 VR-CESM 0.25° 0.542 0.291 0.264 0.981 0.589 0.193 0.265 0.968 VR-CESM 0.125° 0.554 0.291 0.264 0.981 0.589 0.193 0.263 0.968 VR-CESM 0.125° 0.548 0.183 0.209 0.975 0.587 0.129 0.253 0.971 WRF 9km 0.401 0.182 0.254 0.971 0.611 0.093 0.138 0.006 0.389 0.989 VR-CESM 0.25° 0.138 0.017 0.361 0.903 0.138 0.005 0.353 0.095 VR-CESM 0.125° 0.138 0.017 0.3	$\overline{ ext{VR-CESM 0.25}^{\circ}}$	0.542	0.279	0.264	0.981	0.589	0.193	0.265	0.968
WRF 9km uniform CESM 0.25° 2.143 1.370 0.881 0.966 1.991 1.295 0.783 0.914 MAM PRIST DAY INTERIOR OF 18 MSD MAD MAD </th <th>$ext{VR-CESM} \; 0.125^{\circ}$</th> <th>0.554</th> <th>0.291</th> <th>0.267</th> <th>0.979</th> <th>0.579</th> <th>0.217</th> <th>0.263</th> <th>0.970</th>	$ ext{VR-CESM} \; 0.125^{\circ}$	0.554	0.291	0.267	0.979	0.579	0.217	0.263	0.970
uniform CESM 0.25° 0.601 0.182 0.254 0.971 0.611 0.096 0.259 0.948 MAM PRISID Cor RMSD MRD DRD DND DOR VR-CESM 0.25° 0.542 0.279 0.264 0.981 0.589 0.263 0.960 VR-CESM 0.125° 0.542 0.291 0.267 0.979 0.579 0.217 0.263 0.970 WRF 9km 0.448 0.183 0.209 0.975 0.581 0.960 0.291 0.269 0.234 0.971 MRF 9km 0.601 0.182 0.254 0.971 0.611 0.096 0.259 0.964 VR-CESM 0.25° 0.138 0.017 0.361 0.903 0.188 0.008 0.389 0.148 0.009 0.188 0.008 0.889 0.148 0.005 0.375 0.897 VR-CESM 0.125° 0.138 0.010 0.587 0.850 0.188 0.009 0.188 <th>WRF 27km</th> <th></th> <th>-0.183</th> <th>0.209</th> <th>0.975</th> <th>0.587</th> <th>-0.269</th> <th>0.234</th> <th>0.970</th>	WRF 27km		-0.183	0.209	0.975	0.587	-0.269	0.234	0.970
MAM	WRF 9km	2.143	1.370	0.881	0.966	1.991	1.295	0.783	0.971
VR-CESM 0.25° 0.542 0.279 0.264 0.981 0.589 0.133 0.265 0.988 VR-CESM 0.125° 0.554 0.291 0.267 0.979 0.579 0.217 0.263 0.970 WRF 27km 0.448 -0.183 0.209 0.975 0.587 -0.269 0.234 0.971 WRF 9km 2.143 1.370 0.881 0.966 1.991 1.295 0.783 0.971 JJA CPC UW VR-CESM 0.25° 0.601 0.182 0.254 0.971 0.611 0.096 0.259 0.964 VR-CESM 0.125° 0.138 -0.017 0.361 0.903 0.138 -0.008 0.359 0.905 VR-CESM 0.125° 0.138 -0.017 0.361 0.903 0.138 -0.009 0.359 0.905 VR-CESM 0.125° 0.153 -0.016 0.388 0.889 0.148 0.005 0.359 0.905 WRF 9km 1.013 <	uniform CESM 0.25°	0.601	0.182	0.254	0.971	0.611	0.096	0.259	0.964
VR-CESM 0.25° 0.542 0.279 0.264 0.981 0.589 0.193 0.265 0.986 VR-CESM 0.125° 0.554 0.291 0.267 0.979 0.579 0.217 0.263 0.970 WRF 27km 0.448 -0.183 0.209 0.975 0.587 -0.269 0.234 0.970 WRF 9km 2.143 1.370 0.881 0.966 1.991 1.295 0.783 0.971 JJA CPC TW UW VR-CESM 0.25° 0.138 -0.017 0.361 0.903 0.138 -0.005 0.389 0.989 VR-CESM 0.125° 0.133 -0.006 0.388 0.889 0.148 0.005 0.359 0.905 VR-CESM 0.125° 0.153 -0.006 0.388 0.889 0.148 0.005 0.375 0.897 WRF 9km 1.013 0.644 2.518 0.853 1.00 0.654 2.654 0.881 uniform CESM 0.25° <th>MAM</th> <th></th> <th>PR</th> <th>ISM</th> <th></th> <th></th> <th>DAY</th> <th>MET</th> <th></th>	MAM		PR	ISM			DAY	MET	
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WRF 27km 0.448 -0.183 0.209 0.975 0.587 -0.269 0.234 0.970 WRF 9km 2.143 1.370 0.881 0.966 1.991 1.295 0.783 0.971 uniform CESM 0.25° 0.601 0.182 0.254 0.971 0.611 0.096 0.259 0.964 JJA CPP CPP CPP UW RMSD MAD MRD Corr RMSD MAD MRD Corr RMSD MAD MRD Corr RMSD MAD MRD Corr RMSD MAD MRD MRD Corr CMSD MAD MRD MRD MRD MRD MRD MRD MRD MRD MRD MR	$\overline{ ext{VR-CESM 0.25}^{\circ}}$	0.542	0.279	0.264	0.981	0.589	0.193	0.265	0.968
WRF 9km uniform CESM 0.25° 2.143 1.370 0.881 0.966 1.991 1.295 0.783 0.971 uniform CESM 0.25° 0.601 0.182 0.254 0.971 0.611 0.096 0.259 0.964 JJA CPC UW VR-CESM 0.25° 0.138 -0.017 0.361 0.903 0.138 0.008 0.359 0.905 VR-CESM 0.125° 0.153 -0.006 0.388 0.889 0.148 0.005 0.359 0.905 WRF 9km 0.213 0.010 0.587 0.850 0.186 0.019 0.515 0.892 WRF 9km 1.013 0.644 2.518 0.853 1.000 0.654 2.654 0.881 uniform CESM 0.25° 0.177 -0.034 0.471 0.835 0.179 -0.025 0.467 0.881 UR-CESM 0.125° 0.138 -0.017 0.361 0.903 0.138 -0.008 0.359 0.905 VR-CESM 0.125° 0.153	$ ext{VR-CESM} \; 0.125^{\circ}$	0.554	0.291	0.267	0.979	0.579	0.217	0.263	0.970
Note	WRF 27km	0.448	-0.183	0.209	0.975	0.587	-0.269	0.234	0.970
Name	WRF 9km	2.143	1.370	0.881	0.966	1.991	1.295	0.783	0.971
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VR-CESM 0.125° 0.381 -0.054 0.223 0.969 0.471 -0.067 0.260 0.956 WRF 27km 0.382 -0.271 0.247 0.982 0.506 -0.294 0.278 0.971 WRF 9km 1.851 1.297 1.091 0.960 1.779 1.283 1.065 0.964	VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25° SON VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25°	0.138 0.153 0.213 1.013 0.177 RMSD 0.536 0.381 0.382 1.851	PRJ MAD -0.017 -0.006 0.010 0.644 -0.034 CF MAD 0.346 -0.054 -0.271 1.297 0.022	MRD 0.361 0.388 0.587 2.518 0.471 CC MRD 0.338 0.223 0.247 1.091 0.214	0.903 0.889 0.850 0.853 0.835 Corr 0.984 0.969 0.982 0.960	RMSD 0.138 0.148 0.186 1.000 0.179 RMSD 0.579 0.471 0.506 1.779	MAD -0.008 0.005 0.019 0.654 -0.025 WAD 0.323 -0.067 -0.294 1.283 -0.001	MRD 0.359 0.375 0.515 2.654 0.467 W MRD 0.351 0.260 0.278 1.065 0.271	0.905 0.897 0.892 0.881 0.837 Corr 0.966 0.956 0.971 0.964
WRF 27km 0.382 -0.271 0.247 0.982 0.506 -0.294 0.278 0.971 WRF 9km 1.851 1.297 1.091 0.960 1.779 1.283 1.065 0.964	VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25° SON VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25°	0.138 0.153 0.213 1.013 0.177 RMSD 0.536 0.381 0.382 1.851 0.365	PRJ MAD -0.017 -0.006 0.010 0.644 -0.034 CP MAD 0.346 -0.054 -0.271 1.297 0.022 PRJ	MRD 0.361 0.388 0.587 2.518 0.471 PC MRD 0.338 0.223 0.247 1.091 0.214 SM	0.903 0.889 0.850 0.853 0.835 Corr 0.984 0.969 0.982 0.960 0.972	RMSD 0.138 0.148 0.186 1.000 0.179 RMSD 0.579 0.471 0.506 1.779 0.479	MAD -0.008 0.005 0.019 0.654 -0.025 MAD 0.323 -0.067 -0.294 1.283 -0.001 DAYM	MRD 0.359 0.375 0.515 2.654 0.467 W MRD 0.351 0.260 0.278 1.065 0.271 MET	0.905 0.897 0.892 0.881 0.837 Corr 0.966 0.956 0.971 0.964 0.955
WRF 9km 1.851 1.297 1.091 0.960 1.779 1.283 1.065 0.964	VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25° SON VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25° SON	0.138 0.153 0.213 1.013 0.177 RMSD 0.536 0.381 0.382 1.851 0.365	PRJ MAD -0.017 -0.006 0.010 0.644 -0.034 CP MAD 0.346 -0.054 -0.271 1.297 0.022 PRJ MAD	MRD 0.361 0.388 0.587 2.518 0.471 PC MRD 0.338 0.223 0.247 1.091 0.214 SM MRD	0.903 0.889 0.850 0.853 0.835 Corr 0.984 0.969 0.982 0.960 0.972	RMSD 0.138 0.148 0.186 1.000 0.179 RMSD 0.579 0.471 0.506 1.779 0.479	MAD -0.008 0.005 0.019 0.654 -0.025 WAD 0.323 -0.067 -0.294 1.283 -0.001 DAYN MAD	MRD 0.359 0.375 0.515 2.654 0.467 W MRD 0.351 0.260 0.278 1.065 0.271 MET MRD	0.905 0.897 0.892 0.881 0.837 Corr 0.966 0.956 0.971 0.964 0.955
	VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25° SON VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25° SON VR-CESM 0.25°	0.138 0.153 0.213 1.013 0.177 RMSD 0.536 0.381 0.382 1.851 0.365 RMSD 0.536	PRI MAD -0.017 -0.006 0.010 0.644 -0.034 CF MAD 0.346 -0.054 -0.271 1.297 0.022 PRI MAD 0.346	MRD 0.361 0.388 0.587 2.518 0.471 PC MRD 0.338 0.223 0.247 1.091 0.214 SM MRD 0.338	Corr 0.982 0.899 0.850 0.853 0.835 Corr 0.984 0.969 0.972 Corr 0.984	RMSD 0.138 0.148 0.186 1.000 0.179 RMSD 0.579 0.471 0.506 1.779 0.479 RMSD 0.579	MAD -0.008 0.005 0.019 0.654 -0.025 WAD 0.323 -0.067 -0.294 1.283 -0.001 DAYM MAD 0.323	MRD 0.359 0.375 0.515 2.654 0.467 W MRD 0.351 0.260 0.278 1.065 0.271 MET MRD 0.351	0.905 0.897 0.892 0.881 0.837 Corr 0.966 0.956 0.971 0.964 0.955 Corr
uniform CESM 0.25° 0.365 0.022 0.214 0.972 0.479 -0.001 0.271 0.955	VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25° SON VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25° SON VR-CESM 0.25° VR-CESM 0.125°	0.138 0.153 0.213 1.013 0.177 RMSD 0.536 0.381 0.365 RMSD 0.536 0.381	PRI MAD -0.017 -0.006 0.010 0.644 -0.034 -0.346 -0.054 -0.271 1.297 0.022 PRI MAD 0.346 -0.054	MRD 0.361 0.388 0.587 2.518 0.471 PC MRD 0.338 0.223 0.247 1.091 0.214 SM MRD 0.338 0.223	Corr 0.982 0.899 0.853 0.835 Corr 0.984 0.969 0.972 Corr 0.984 0.969	RMSD 0.138 0.148 0.186 1.000 0.179 RMSD 0.579 0.471 0.506 1.779 0.479 RMSD 0.579 0.471	MAD -0.008 0.005 0.019 0.654 -0.025 WAD 0.323 -0.067 -0.294 1.283 -0.001 DAYN MAD 0.323 -0.067	MRD 0.359 0.375 0.515 2.654 0.467 W MRD 0.351 0.260 0.278 1.065 0.271 MET MRD 0.351 0.260	0.905 0.897 0.892 0.881 0.837 Corr 0.966 0.956 0.955 Corr 0.966 0.956
	VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25° SON VR-CESM 0.25° VR-CESM 0.125° WRF 27km WRF 9km uniform CESM 0.25° VR-CESM 0.125° VR-CESM 0.125° VR-CESM 0.125° WRF 27km	0.138 0.153 0.213 1.013 0.177 RMSD 0.536 0.381 0.365 RMSD 0.536 0.381 0.382	PRJ MAD -0.017 -0.006 0.010 0.644 -0.034 CF MAD 0.346 -0.054 -0.271 1.297 0.022 PRJ MAD 0.346 -0.054 -0.271	MRD 0.361 0.388 0.587 2.518 0.471 PC MRD 0.338 0.223 0.247 1.091 0.214 SM MRD 0.338 0.223 0.247 0.214	Corr 0.984 0.972 0.984 0.969 0.972 Corr 0.984 0.969 0.972	RMSD 0.138 0.148 0.186 1.000 0.179 RMSD 0.579 0.471 0.506 1.779 0.479 RMSD 0.579 0.471 0.506	MAD -0.008 0.005 0.019 0.654 -0.025 WV MAD 0.323 -0.067 -0.294 1.283 -0.001 DAYP MAD 0.323 -0.067 -0.294	MRD 0.359 0.375 0.515 2.654 0.467 W MRD 0.351 0.260 0.278 1.065 0.271 MET MRD 0.351 0.260 0.278	0.905 0.897 0.892 0.881 0.837 Corr 0.966 0.956 0.955 Corr 0.966 0.956 0.956