RegCM and CORDEX simulations of the local flows over the Adriatic region

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Belušić A, M Telišman Prtenjak, I Güttler, N Ban, D Leutwyler, C Schär, 2017: Near-surface wind variability over the broader Adriatic region: insights from an ensemble of regional climate models. *Clim. Dyn.*, DOI: 10.1007/s00382-017-3885-5



7 EURO-CORDEX simulations 3 Med-CORDEX simulations 2 ETHZ simulations ERA-Interim

Station observations QuikSCAT observations

Daily and subdaily wind speeds

Period: 1996/2001-2008









Belušić, A, I Güttler, B Ahrens, A Obermann-Hellhund, M Telišman Prtenjak, 2018: Wind over the Adriatic Region in CORDEX Climate Change Scenarios, *in revision*

0.11°/12.5km RCMs

GCM boundary conditions

CCLM4 ^a	Climate Limited-area Modelling Community (CLMcom)	CNRM-CERFACS-CNRM-CM5 ^h	r1i1p1
		ICHEC-EC-EARTH ⁱ	r12i1p1
		MOHC-HadGEM2-ES ^j	r1i1p1
		MPI-M-MPI-ESM-LR ^k	r1i1p1
		ICHEC-EC-EARTH	r3i1p1
HIRHAM5 [®]	Danish Meteorological Institute (DMI)		665.6
RACMO22E ^c	Royal Netherlands Meteorological Institute (KNMI)	ICHEC-EC-EARTH	
		MOHC-HadGEM2-ES	riiipi
		CNDM CEDEACS CNDM CM5	r1;1n1
RCA4 ^d	Swedish Meteorological and Hydrological Institute (SMHI)	ICHEC EC EADTH	r111p1
		IDSL IDSL CM5A MD ¹	r1i1p1
		MOUC HadGEM2 ES	r1i1p1
		MORC-HAUGENIZ-ES	r1i1p1
		WIFI-WI-WIFI-ESWI-LK	riiipi
ALADIN53 ^e	Centre National de	CNRM-CERFACS-CNRM-CM5	r1i1p1
	Recherches Meteorologiques (CNRM)		6750 6
RegCM42 ^f	Meteorological and Hydrological Service of Croatia (DHMZ)	CNRM-CERFACS-CNRM-CM5	r1i1p1
		ICHEC-EC-EARTH	r12i1p1
		MOHC-HadGEM2-ES	r1i1p1
		MPI-M-MPI-ESM-MR	r1i1p1
REMO ^g	Max Planck Institute for Meteorology	MPI-M-MPI-ESM-LR	rli1p1
	(MPI-M)		r2i1p1





(b, e) and P3 (c, f) compared to P0.



(b, e) and P3 (c, f) compared to P0.



Relative changes (P2/P0-1) in P2 compared to P0 in frequencies of the wind blowing from NNE to ENE direction (upper triangle) and from ESE to SSE (lower triangle). Red color indicates the increase in frequency, while blue indicates the reduction in frequency. Table under each matrix contains number of RCM simulations that shows reduction in NNE-ENE/ESE-SSE flow frequencies (NoS $\leq -1\%$), no change in frequencies (-1% < NoS < 1%) and an increase in frequencies (NoS $\geq 1\%$). NoS stands for "number of simulations with specific relative change". The results are for RCP8.5 scenario.

Thank you for your attention!

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