

Comparison of EXTPAR results

Used EXTPAR versions in the comparison for the DWD COSMO-D2 model domain:

Release: DWD

Tag name: V2_10

Checkin-Date: 2018-02-19 10:04:42

Code is modified ...: .false.

Compile-Date: 2018-03-14 10:03:25

Compiled by: for0adm

Release: Release candidate 5.0

Branch: runscript-update

Compile-Date: 2018-11-06 12:18:35

Code is modified ...: modified

Library name: extpar-4.0

Compiled on: lce

Revision number: faf9b03e69c9e5e5f8b5651a18ada8c66f8bd1c6

Checkout-Date: 2018-11-05 10:05:39

DWD COSMO-D2 model domain properties:

pollon=-170.0

pollat=40.0

startlon_tot=-11.0

startlat_tot=-10.0

dlon=0.020

dlat=0.020

ie_tot=1000

je_tot=1000

The comparison of basic EXTPAR output fields, required for COSMO-D2 showed for the domain statistics (minimum, average, and maximum) retrieved from Climate Data Operators (CDO) almost no difference for variables based on land-use data set and aerosols (Figs. 1 and 3). The differences in the albedo variables (Fig. 2) are due to the modified parameter range (0 to 1). For NDVI and SOILTYP some small differences still exist, which could be due to different compiler versions used for DWD V2_10 and Release candidate 5.0 (Figs. 1 and 2). The same reason is assumed for the difference in SSO_THETA, while other orography variables show no difference (Fig. 1).

EXTPAR_COSMO_1000_1000_020_V2_10_DWD/log_1.asc					EXTPAR_COSMO_1000_1000_020_pre_RELEASE_5.0/log_1.asc						
1	1111-01-11 00	0.0000	0.62975	1.0000	FR_LAND	1	1111-01-11 00	0.0000	0.62975	1.0000	FR_LAND
2	1111-01-11 00	0.0000	0.000193	1.0000	ICE	2	1111-01-11 00	0.0000	0.000193	1.0000	ICE
3	1111-01-11 00	0.0000	0.39630	0.80000	PLCOV_MN	3	1111-01-11 00	0.0000	0.39630	0.80000	PLCOV_MN
4	1111-01-11 00	0.0000	0.53269	0.90000	PLCOV_MX	4	1111-01-11 00	0.0000	0.53269	0.90000	PLCOV_MX
5	1111-01-11 00	0.0000	0.53635	3.0000	LAI_MN	5	1111-01-11 00	0.0000	0.53635	3.0000	LAI_MN
6	1111-01-11 00	0.0000	2.4013	6.0000	LAI_MX	6	1111-01-11 00	0.0000	2.4013	6.0000	LAI_MX
7	1111-01-11 00	1.0000e-06	0.24940	3.8617	Z0	7	1111-01-11 00	1.0000e-06	0.24940	3.8617	Z0
8	1111-01-11 00	0.95000	0.98959	0.99990	EMTS_RAD	8	1111-01-11 00	0.95000	0.98959	0.99990	EMTS_RAD
9	1111-01-11 00	0.0000	78.603	999.00	RSMIN	9	1111-01-11 00	0.0000	78.603	999.00	RSMIN
10	1111-01-11 00	0.0000	0.011990	1.0000	URBAN	10	1111-01-11 00	0.0000	0.011990	1.0000	URBAN
11	1111-01-11 00	0.0000	0.11273	0.90000	FOR_D	11	1111-01-11 00	0.0000	0.11273	0.90000	FOR_D
12	1111-01-11 00	0.0000	0.053963	0.90000	FOR_E	12	1111-01-11 00	0.0000	0.053963	0.90000	FOR_E
13	1111-01-11 00	0.0000	0.58639	1.5000	ROOTP	13	1111-01-11 00	0.0000	0.58639	1.5000	ROOTP
14	1111-01-11 00	0.0000	0.49777	0.97778	NDVI_MAX	14	1111-01-11 00	0.0000	0.49777	0.97778	NDVI_MAX
15	1111-01-11 00	-14.750	232.14	4101.0	HSURF	15	1111-01-11 00	-14.750	232.14	4101.0	HSURF
16	1111-01-11 00	-144.64	2276.4	40215	FIS	16	1111-01-11 00	-144.64	2276.4	40215	FIS
17	1111-01-11 00	0.0000	22.356	679.50	SSO_STD	17	1111-01-11 00	0.0000	22.356	679.50	SSO_STD
18	1111-01-11 00	-1.5708	0.01280	1.5708	SSO_THETA	18	1111-01-11 00	-1.5708	0.01280	1.5708	SSO_THETA
19	1111-01-11 00	0.0000	0.15699	0.99937	SSO_GAMMA	19	1111-01-11 00	0.0000	0.15699	0.99937	SSO_GAMMA
20	1111-01-11 00	0.0000	0.029560	0.84832	SSO_SIGMA	20	1111-01-11 00	0.0000	0.029560	0.84832	SSO_SIGMA
21	1111-01-11 00	261.76	282.66	291.38	T_CL	21	1111-01-11 00	261.76	282.66	291.38	T_CL
22	1111-01-11 00	0.0000	0.0088134	1.0000	FR_LAKE	22	1111-01-11 00	0.0000	0.0088134	1.0000	FR_LAKE
23	1111-01-11 00	-1.0000	-0.89719	50.000	DEPTH_LK	23	1111-01-11 00	-1.0000	-0.89719	50.000	DEPTH_LK
24	1111-01-11 00	1.0000	6.3456	9.0000	SOILTP	24	1111-01-11 00	1.0000	6.3456	9.0000	SOILTP
25	1111-01-11 00	0.0000	0.0020896	1.0000	LU_CLASS_FRACTION	25	1111-01-11 00	0.0000	0.0020896	1.0000	LU_CLASS_FRACTION
26	1111-01-11 00	0.0000	0.14039	1.0000	LU_CLASS_FRACTION	26	1111-01-11 00	0.0000	0.14039	1.0000	LU_CLASS_FRACTION
27	1111-01-11 00	0.0000	0.10463	1.0000	LU_CLASS_FRACTION	27	1111-01-11 00	0.0000	0.10463	1.0000	LU_CLASS_FRACTION
28	1111-01-11 00	0.0000	0.060494	1.0000	LU_CLASS_FRACTION	28	1111-01-11 00	0.0000	0.060494	1.0000	LU_CLASS_FRACTION
29	1111-01-11 00	0.0000	0.0000	0.0000	LU_CLASS_FRACTION	29	1111-01-11 00	0.0000	0.0000	0.0000	LU_CLASS_FRACTION
30	1111-01-11 00	0.0000	0.10508	1.0000	LU_CLASS_FRACTION	30	1111-01-11 00	0.0000	0.10508	1.0000	LU_CLASS_FRACTION
31	1111-01-11 00	0.0000	0.0000	0.0000	LU_CLASS_FRACTION	31	1111-01-11 00	0.0000	0.0000	0.0000	LU_CLASS_FRACTION
32	1111-01-11 00	0.0000	0.027641	1.0000	LU_CLASS_FRACTION	32	1111-01-11 00	0.0000	0.027641	1.0000	LU_CLASS_FRACTION
33	1111-01-11 00	0.0000	0.015166	1.0000	LU_CLASS_FRACTION	33	1111-01-11 00	0.0000	0.015166	1.0000	LU_CLASS_FRACTION
34	1111-01-11 00	0.0000	0.039009	1.0000	LU_CLASS_FRACTION	34	1111-01-11 00	0.0000	0.039009	1.0000	LU_CLASS_FRACTION
35	1111-01-11 00	0.0000	0.020005	1.0000	LU_CLASS_FRACTION	35	1111-01-11 00	0.0000	0.020005	1.0000	LU_CLASS_FRACTION
36	1111-01-11 00	0.0000	0.046136	1.0000	LU_CLASS_FRACTION	36	1111-01-11 00	0.0000	0.046136	1.0000	LU_CLASS_FRACTION
37	1111-01-11 00	0.0000	0.0057064	1.0000	LU_CLASS_FRACTION	37	1111-01-11 00	0.0000	0.0057064	1.0000	LU_CLASS_FRACTION
38	1111-01-11 00	0.0000	0.031835	1.0000	LU_CLASS_FRACTION	38	1111-01-11 00	0.0000	0.031835	1.0000	LU_CLASS_FRACTION
39	1111-01-11 00	0.0000	0.014887	1.0000	LU_CLASS_FRACTION	39	1111-01-11 00	0.0000	0.014887	1.0000	LU_CLASS_FRACTION
40	1111-01-11 00	0.0000	0.0000	0.0000	LU_CLASS_FRACTION	40	1111-01-11 00	0.0000	0.0000	0.0000	LU_CLASS_FRACTION
41	1111-01-11 00	0.0000	0.0000	0.0000	LU_CLASS_FRACTION	41	1111-01-11 00	0.0000	0.0000	0.0000	LU_CLASS_FRACTION
42	1111-01-11 00	0.0000	0.002964	1.0000	LU_CLASS_FRACTION	42	1111-01-11 00	0.0000	0.002964	1.0000	LU_CLASS_FRACTION
43	1111-01-11 00	0.0000	0.011562	1.0000	LU_CLASS_FRACTION	43	1111-01-11 00	0.0000	0.011562	1.0000	LU_CLASS_FRACTION
44	1111-01-11 00	0.0000	0.0016381	1.0000	LU_CLASS_FRACTION	44	1111-01-11 00	0.0000	0.0016381	1.0000	LU_CLASS_FRACTION
45	1111-01-11 00	0.0000	0.37025	1.0000	LU_CLASS_FRACTION	45	1111-01-11 00	0.0000	0.37025	1.0000	LU_CLASS_FRACTION
46	1111-01-11 00	0.0000	0.000193	1.0000	LU_CLASS_FRACTION	46	1111-01-11 00	0.0000	0.000193	1.0000	LU_CLASS_FRACTION
47	1111-01-11 00	0.0000	0.0000	0.0000	LU_CLASS_FRACTION	47	1111-01-11 00	0.0000	0.0000	0.0000	LU_CLASS_FRACTION

Fig. 1: Comparison of EXTPAR output fields retrieved from CDO. Columns are Date, Minimum, Average, Maximum, Field Name for DWD version V2_10 (left) and Release candidate 5.0 (right). Differences are highlighted by TKDiff.

EXTPAR_COSMO_1000_1000_020_V2_10_DWD/log_2.asc					EXTPAR_COSMO_1000_1000_020_pre_RELEASE_5.0/log_2.asc						
1	1111-01-11 00	7.0000	10.589	70.000	ALB_DIF12	1	1111-01-11 00	0.070000	0.10589	0.70000	ALB_DIF12
2	1111-02-11 00	7.0000	10.939	70.000	ALB_DIF12	2	1111-02-11 00	0.070000	0.10939	0.70000	ALB_DIF12
3	1111-03-11 00	7.0000	11.598	70.000	ALB_DIF12	3	1111-03-11 00	0.070000	0.11598	0.70000	ALB_DIF12
4	1111-04-11 00	7.0000	12.727	70.000	ALB_DIF12	4	1111-04-11 00	0.070000	0.12727	0.70000	ALB_DIF12
5	1111-05-11 00	7.0000	13.719	70.000	ALB_DIF12	5	1111-05-11 00	0.070000	0.13719	0.70000	ALB_DIF12
6	1111-06-11 00	7.0000	13.829	70.000	ALB_DIF12	6	1111-06-11 00	0.070000	0.13829	0.70000	ALB_DIF12
7	1111-07-11 00	7.0000	13.619	70.000	ALB_DIF12	7	1111-07-11 00	0.070000	0.13619	0.70000	ALB_DIF12
8	1111-08-11 00	7.0000	13.127	70.000	ALB_DIF12	8	1111-08-11 00	0.070000	0.13127	0.70000	ALB_DIF12
9	1111-09-11 00	7.0000	12.523	70.000	ALB_DIF12	9	1111-09-11 00	0.070000	0.12523	0.70000	ALB_DIF12
10	1111-10-11 00	7.0000	11.651	70.000	ALB_DIF12	10	1111-10-11 00	0.070000	0.11651	0.70000	ALB_DIF12
11	1111-11-11 00	7.0000	10.626	70.000	ALB_DIF12	11	1111-11-11 00	0.070000	0.10626	0.70000	ALB_DIF12
12	1111-12-11 00	7.0000	10.624	70.000	ALB_DIF12	12	1111-12-11 00	0.070000	0.10624	0.70000	ALB_DIF12
13	1111-01-11 00	0.0000	0.27865	0.86601	NDVI	13	1111-01-11 00	0.0000	0.28275	0.86601	NDVI
14	1111-02-11 00	0.0000	0.26077	0.86316	NDVI	14	1111-02-11 00	0.0000	0.25578	0.86316	NDVI
15	1111-03-11 00	0.0000	0.39060	0.86209	NDVI	15	1111-03-11 00	0.0000	0.31276	0.86209	NDVI
16	1111-04-11 00	0.0000	0.36212	0.89346	NDVI	16	1111-04-11 00	0.0000	0.36818	0.89346	NDVI
17	1111-05-11 00	0.0000	0.45592	0.96928	NDVI	17	1111-05-11 00	0.0000	0.46078	0.96928	NDVI
18	1111-06-11 00	0.0000	0.47197	0.97778	NDVI	18	1111-06-11 00	0.0000	0.47728	0.97778	NDVI
19	1111-07-11 00	0.0000	0.49079	0.97255	NDVI	19	1111-07-11 00	0.0000	0.49551	0.97255	NDVI
20	1111-08-11 00	0.0000	0.43352	0.95948	NDVI	20	1111-08-11 00	0.0000	0.43856	0.95948	NDVI
21	1111-09-11 00	0.0000	0.43352	0.95948	NDVI	21	1111-09-11 00	0.0000	0.43856	0.95948	NDVI
22	1111-10-11 00	0.0000	0.42271	0.94118	NDVI	22	1111-10-11 00	0.0000	0.42784	0.94118	NDVI
23	1111-11-11 00	0.0000	0.39732	0.90915	NDVI	23	1111-11-11 00	0.0000	0.31358	0.90915	NDVI
24	1111-12-11 00	0.0000	0.34598	0.89085	NDVI	24	1111-12-11 00	0.0000	0.34986	0.89085	NDVI
25	1111-01-11 00	0.0000	0.36267	1.0000	NDVI_MRAT	25	1111-01-11 00	0.0000	0.37362	1.0000	NDVI_MRAT
26	1111-02-11 00	0.0000	0.36644	1.0000	NDVI_MRAT	26	1111-02-11 00	0.0000	0.37745	1.0000	NDVI_MRAT
27	1111-03-11 00	0.0000	0.39995	1.0000	NDVI_MRAT	27	1111-03-11 00	0.0000	0.41761	1.0000	NDVI_MRAT
28	1111-04-11 00	0.0000	0.48783	1.0000	NDVI_MRAT	28	1111-04-11 00	0.0000	0.47925	1.0000	NDVI_MRAT
29	1111-05-11 00	0.0000	0.58317	1.0000	NDVI_MRAT	29	1111-05-11 00	0.0000	0.58788	1.0000	NDVI_MRAT
30	1111-06-11 00	0.0000	0.60308	1.0000	NDVI_MRAT	30	1111-06-11 00	0.0000	0.61767	1.0000	NDVI_MRAT
31	1111-07-11 00	0.0000	0.57540	1.0000	NDVI_MRAT	31	1111-07-11 00	0.0000	0.58312	1.0000	NDVI_MRAT
32	1111-08-11 00	0.0000	0.55568	1.0000	NDVI_MRAT	32	1111-08-11 00	0.0000	0.56983	1.0000	NDVI_MRAT
33	1111-09-11 00	0.0000	0.55568	1.0000	NDVI_MRAT	33	1111-09-11 00	0.0000	0.56983	1.0000	NDVI_MRAT
34	1111-10-11 00	0.0000	0.54170	1.0000	NDVI_MRAT	34	1111-10-11 00	0.0000	0.55583	1.0000	NDVI_MRAT
35	1111-11-11 00	0.0000	0.54634	1.0000	NDVI_MRAT	35	1111-11-11 00	0.0000	0.55296	1.0000	NDVI_MRAT
36	1111-12-11 00	0.0000	0.44738	1.0000	NDVI_MRAT	36	1111-12-11 00	0.0000	0.45904	1.0000	NDVI_MRAT

Fig. 2: Comparison of EXTPAR output fields retrieved from CDO. Columns are Date, Minimum, Average, Maximum, Field Name for DWD version V2_10 (left) and Release candidate 5.0 (right). Differences are highlighted by TKDiff.

EXTPAR_COSMO_1000_1000_020_V2_10_DWD/020_3.asc					EXTPAR_COSMO_1000_1000_020_pre_RELEASE_5.0/020_3.asc						
1	1111-01-11 00	0.0031950	0.019079	0.038473	AER_BC12	1	1111-01-11 00	0.0031950	0.019079	0.038473	AER_BC12
2	1111-02-11 00	0.0036821	0.017935	0.037788	AER_BC12	2	1111-02-11 00	0.0036821	0.017935	0.037788	AER_BC12
3	1111-03-11 00	0.0039212	0.021922	0.043181	AER_BC12	3	1111-03-11 00	0.0039212	0.021922	0.043181	AER_BC12
4	1111-04-11 00	0.0040467	0.014344	0.029622	AER_BC12	4	1111-04-11 00	0.0040467	0.014344	0.029622	AER_BC12
5	1111-05-11 00	0.0050899	0.019252	0.036975	AER_BC12	5	1111-05-11 00	0.0050899	0.019252	0.036975	AER_BC12
6	1111-06-11 00	0.0031470	0.023350	0.048367	AER_BC12	6	1111-06-11 00	0.0031470	0.023350	0.048367	AER_BC12
7	1111-07-11 00	0.0026557	0.016989	0.038492	AER_BC12	7	1111-07-11 00	0.0026557	0.016989	0.038492	AER_BC12
8	1111-08-11 00	0.0026655	0.014957	0.034287	AER_BC12	8	1111-08-11 00	0.0026655	0.014957	0.034287	AER_BC12
9	1111-09-11 00	0.0023987	0.016392	0.034984	AER_BC12	9	1111-09-11 00	0.0023987	0.016392	0.034984	AER_BC12
10	1111-10-11 00	0.0021317	0.014653	0.030479	AER_BC12	10	1111-10-11 00	0.0021317	0.014653	0.030479	AER_BC12
11	1111-11-11 00	0.0021428	0.012381	0.024386	AER_BC12	11	1111-11-11 00	0.0021428	0.012381	0.024386	AER_BC12
12	1111-12-11 00	0.0020734	0.013553	0.028092	AER_BC12	12	1111-12-11 00	0.0020734	0.013553	0.028092	AER_BC12
13	1111-01-11 00	0.00077279	0.0041967	0.015556	AER_DUST12	13	1111-01-11 00	0.00077279	0.0041967	0.015556	AER_DUST12
14	1111-02-11 00	0.0022389	0.0069591	0.032628	AER_DUST12	14	1111-02-11 00	0.0022389	0.0069591	0.032628	AER_DUST12
15	1111-03-11 00	0.0046068	0.011907	0.033616	AER_DUST12	15	1111-03-11 00	0.0046068	0.011907	0.033616	AER_DUST12
16	1111-04-11 00	0.0090143	0.023475	0.059237	AER_DUST12	16	1111-04-11 00	0.0090143	0.023475	0.059237	AER_DUST12
17	1111-05-11 00	0.018249	0.046131	0.11770	AER_DUST12	17	1111-05-11 00	0.018249	0.046131	0.11770	AER_DUST12
18	1111-06-11 00	0.015740	0.036263	0.092800	AER_DUST12	18	1111-06-11 00	0.015740	0.036263	0.092800	AER_DUST12
19	1111-07-11 00	0.011477	0.028309	0.075180	AER_DUST12	19	1111-07-11 00	0.011477	0.028309	0.075180	AER_DUST12
20	1111-08-11 00	0.0091797	0.020422	0.059050	AER_DUST12	20	1111-08-11 00	0.0091797	0.020422	0.059050	AER_DUST12
21	1111-09-11 00	0.0076373	0.024423	0.075742	AER_DUST12	21	1111-09-11 00	0.0076373	0.024423	0.075742	AER_DUST12
22	1111-10-11 00	0.011205	0.015110	0.057062	AER_DUST12	22	1111-10-11 00	0.011205	0.015110	0.057062	AER_DUST12
23	1111-11-11 00	0.0080202	0.013062	0.067621	AER_DUST12	23	1111-11-11 00	0.0080202	0.013062	0.067621	AER_DUST12
24	1111-12-11 00	0.0050606	0.0097001	0.045591	AER_DUST12	24	1111-12-11 00	0.0050606	0.0097001	0.045591	AER_DUST12
25	1111-01-11 00	0.012884	0.070085	0.13091	AER_ORG12	25	1111-01-11 00	0.012884	0.070085	0.13091	AER_ORG12
26	1111-02-11 00	0.017790	0.066347	0.11989	AER_ORG12	26	1111-02-11 00	0.017790	0.066347	0.11989	AER_ORG12
27	1111-03-11 00	0.017635	0.082127	0.15488	AER_ORG12	27	1111-03-11 00	0.017635	0.082127	0.15488	AER_ORG12
28	1111-04-11 00	0.017730	0.054467	0.10194	AER_ORG12	28	1111-04-11 00	0.017730	0.054467	0.10194	AER_ORG12
29	1111-05-11 00	0.024701	0.072810	0.11693	AER_ORG12	29	1111-05-11 00	0.024701	0.072810	0.11693	AER_ORG12
30	1111-06-11 00	0.018483	0.086484	0.15290	AER_ORG12	30	1111-06-11 00	0.018483	0.086484	0.15290	AER_ORG12
31	1111-07-11 00	0.017221	0.063894	0.12298	AER_ORG12	31	1111-07-11 00	0.017221	0.063894	0.12298	AER_ORG12
32	1111-08-11 00	0.013018	0.055895	0.10896	AER_ORG12	32	1111-08-11 00	0.013018	0.055895	0.10896	AER_ORG12
33	1111-09-11 00	0.010529	0.060010	0.11694	AER_ORG12	33	1111-09-11 00	0.010529	0.060010	0.11694	AER_ORG12
34	1111-10-11 00	0.0094898	0.054955	0.097135	AER_ORG12	34	1111-10-11 00	0.0094898	0.054955	0.097135	AER_ORG12
35	1111-11-11 00	0.0093434	0.046504	0.078551	AER_ORG12	35	1111-11-11 00	0.0093434	0.046504	0.078551	AER_ORG12
36	1111-12-11 00	0.0091340	0.050475	0.088970	AER_ORG12	36	1111-12-11 00	0.0091340	0.050475	0.088970	AER_ORG12
37	1111-01-11 00	0.0086413	0.021390	0.042370	AER_S0412	37	1111-01-11 00	0.0086413	0.021390	0.042370	AER_S0412
38	1111-02-11 00	0.0093731	0.029400	0.060932	AER_S0412	38	1111-02-11 00	0.0093731	0.029400	0.060932	AER_S0412
39	1111-03-11 00	0.017325	0.048206	0.086394	AER_S0412	39	1111-03-11 00	0.017325	0.048206	0.086394	AER_S0412
40	1111-04-11 00	0.016558	0.064549	0.12095	AER_S0412	40	1111-04-11 00	0.016558	0.064549	0.12095	AER_S0412
41	1111-05-11 00	0.015141	0.040935	0.077538	AER_S0412	41	1111-05-11 00	0.015141	0.040935	0.077538	AER_S0412
42	1111-06-11 00	0.023717	0.051664	0.11607	AER_S0412	42	1111-06-11 00	0.023717	0.051664	0.11607	AER_S0412
43	1111-07-11 00	0.039255	0.089415	0.18248	AER_S0412	43	1111-07-11 00	0.039255	0.089415	0.18248	AER_S0412
44	1111-08-11 00	0.033180	0.088774	0.20067	AER_S0412	44	1111-08-11 00	0.033180	0.088774	0.20067	AER_S0412
45	1111-09-11 00	0.032849	0.10537	0.25690	AER_S0412	45	1111-09-11 00	0.032849	0.10537	0.25690	AER_S0412
46	1111-10-11 00	0.019623	0.042833	0.086081	AER_S0412	46	1111-10-11 00	0.019623	0.042833	0.086081	AER_S0412
47	1111-11-11 00	0.011348	0.028024	0.057385	AER_S0412	47	1111-11-11 00	0.011348	0.028024	0.057385	AER_S0412
48	1111-12-11 00	0.0072757	0.019394	0.041647	AER_S0412	48	1111-12-11 00	0.0072757	0.019394	0.041647	AER_S0412

Fig. 3: Comparison of EXTPAR output fields retrieved from CDO. Columns are Date, Minimum, Average, Maximum, Field Name for DWD version V2_10 (left) and Release candidate 5.0 (right). Differences are highlighted by TKDiff.