14th ALADIN Workshop

Innsbruck, 1-4 June 2004

Present Status of ALADIN Verification Project

Miha Razinger
Environmental Agency of Republic of Slovenia

Topics

- What's new in ALADIN verification project?
- Verification scores examples
- Few unresolved issues

What's new

- Station list created (EWGLAM list + additions)
- Aggregated variables (Tmx, Tmn, Fx) problem resolved
- Documentation & User guide draft
- Member state side packet prepared
- Model data transfer already under way

Current station list

348 SYNOP stations

74 TEMP stations

Model data transfer

- Information & invitation mail sent
- Hungary, Croatia, Slovakia, Romania and Tunisia volunteered for testing
- Data is already arriving via emails …
- … and is stored into database
- So far so good

Status at member states

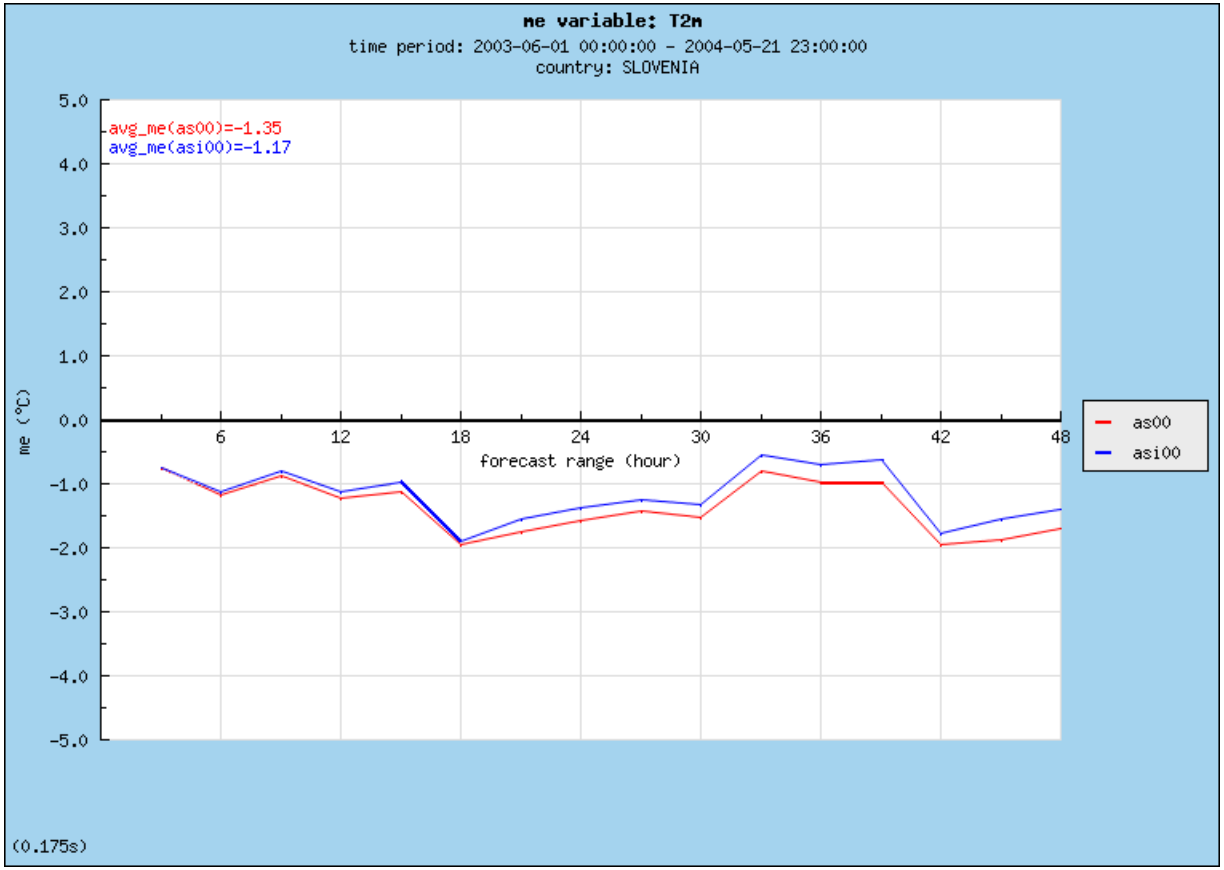
- Hungary (data arriving)
- Croatia (data arriving)
- Slovenia (data arriving)
- Tunisia (data arriving)
- Slovakia (installed, not operational)
- Romania (in preparation)

Where are we?

- FILTER application (ready)
- data transfering and inserting (ready)
- central database (ready)
- web interface (under development)
- documentation / user manual (under development)
- automatic report generation (not yet)

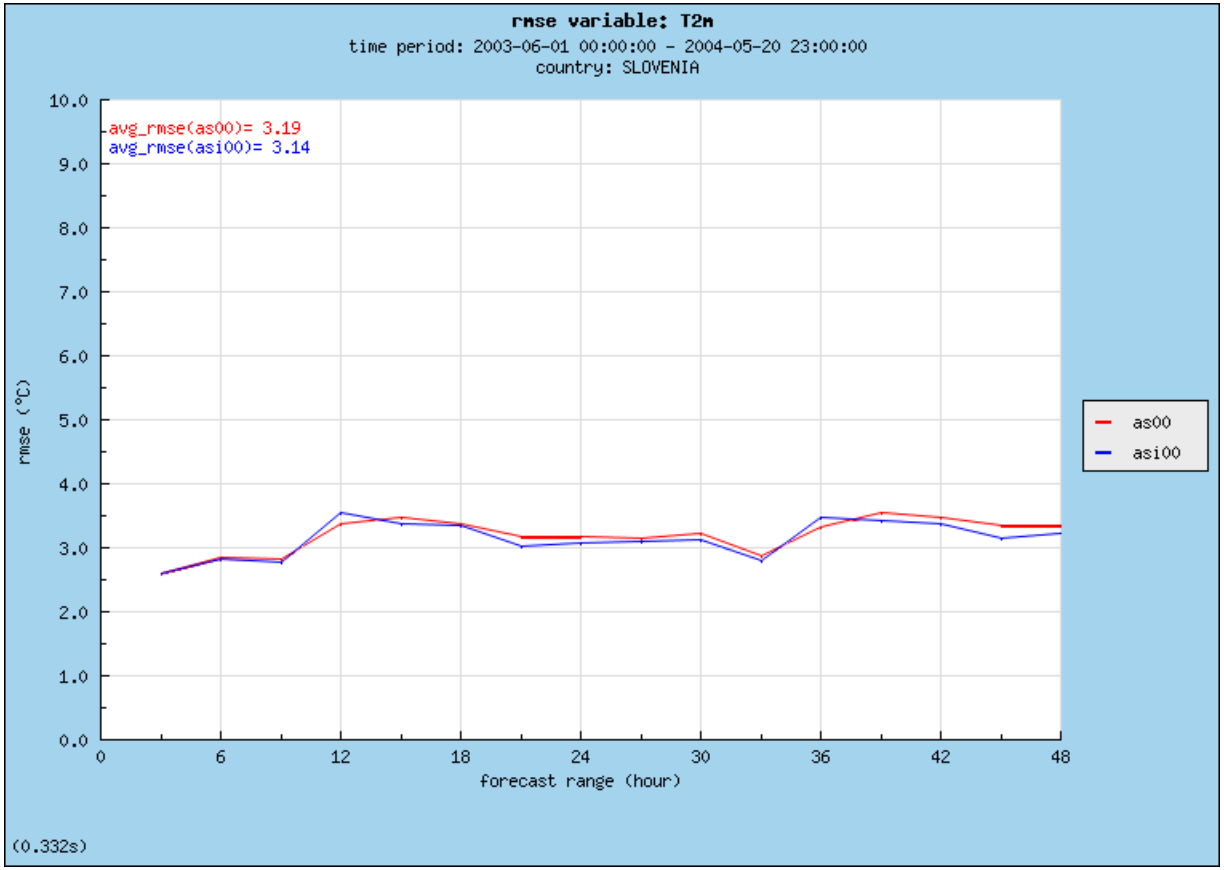
1. Comparison of ALADIN/SI cy12 & cy25

- T2m



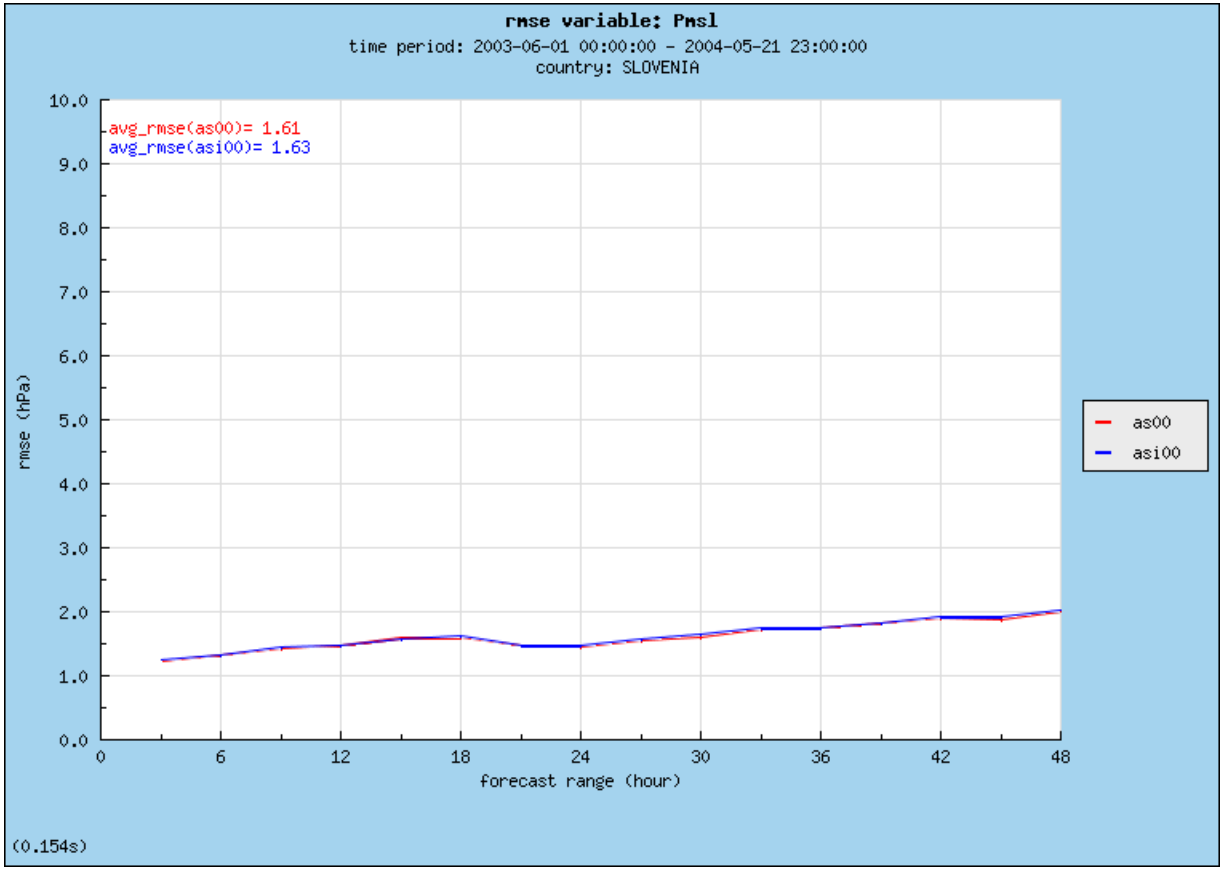
1. Comparison of ALADIN/SI cy12 & cy25

- T2m



1. Comparison of ALADIN/SI cy12 & cy25

- pmsl



1. Comparison of ALADIN/SI cy12 & cy25

- wind speed

Contingency table for parameter *ff* on using model(s) as00, asi00 and FC=12

mod\obs	0<=ff<5	5<=ff<10	10<=ff<20	20<=ff	sum fc
0<=ff<5	5542 5537	443 427	46 47	5 5	6036 6016
5<=ff<10	212 217	147 162	10 9	0 0	369 388
10<=ff<20	1 1	6 7	0 0	0 0	7 8
20<=ff	0 0	0 0	0 0	0 0	0 0
sum obs	5755	596	56	5	sum

num_evnts:6412

PC(as00)= 0.887
HSS(as00)= 0.247

PC(asi00)= 0.889
HSS(asi00)= 0.270

class\score	BIAS	POD	FAR
0<=ff<5	1.049 1.045	0.963 0.962	0.082 0.080
5<=ff<10	0.619 0.651	0.247 0.272	0.602 0.582
10<=ff<20	0.125 0.143	0.000 0.000	1.000 1.000
20<=ff	0.000 0.000	0.000 0.000	0.000 0.000

1. Comparison of ALADIN/SI cy12 & cy25

•total cloudiness

Contingency table for parameter *n* on using model(s) as00, asi00 and FC=12

mod\obs	0<=n<3	3<=n<5	5<=n<7	7<=n	sum fc
0<=n<3	1370 1445	178 191	74 78	56 65	1678 1779
3<=n<5	866 893	159 153	104 106	114 110	1243 1262
5<=n<7	969 885	202 195	157 153	231 178	1559 1411
7<=n	1005 987	260 260	295 293	372 420	1932 1960
sum obs	4210	799	630	773	sum

num_evnts:6412

PC(as00)= 0.321
HSS(as00)= 0.087

PC(asi00)= 0.339
HSS(asi00)= 0.100

class\score	BIAS	POD	FAR
0<=n<3	0.399 0.423	0.325 0.343	0.184 0.188
3<=n<5	1.556 1.579	0.199 0.191	0.872 0.879
5<=n<7	2.475 2.240	0.249 0.243	0.899 0.892
7<=n	2.499 2.536	0.481 0.543	0.807 0.786

1. Comparison of ALADIN/SI cy12 & cy25

- 24h precipitation

Contingency table for parameter *rrc* on using model(s) as00, asi00 and FC=30

mod\obs	0<=rrc<0.1	0.1<=rrc<2	2<=rrc<10	10<=rrc	sum fc
0<=rrc<0.1	2805 2786	240 250	85 107	18 23	3148 3166
0.1<=rrc<2	818 877	276 290	260 263	80 96	1434 1526
2<=rrc<10	308 281	187 174	339 334	239 233	1073 1022
10<=rrc	45 32	49 38	167 147	390 375	651 592
sum obs	3976	752	851	727	sum

num_evnts:6306

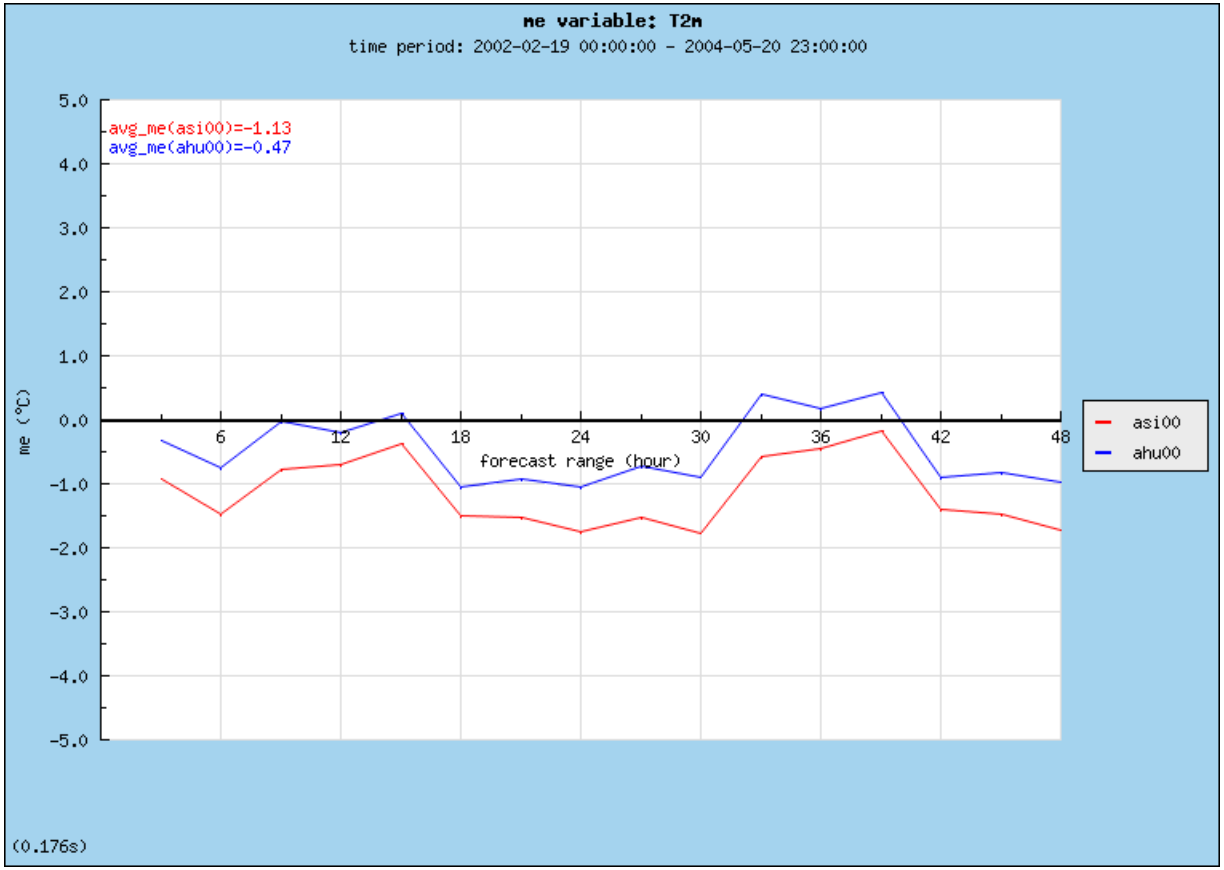
PC(as00)= 0.604
HSS(as00)= 0.365

PC(asi00)= 0.600
HSS(asi00)= 0.357

class\score	BIAS	POD	FAR
0<=rrc<0.1	0.792 0.796	0.705 0.701	0.109 0.120
0.1<=rrc<2	1.907 2.029	0.367 0.386	0.808 0.810
2<=rrc<10	1.261 1.201	0.398 0.392	0.684 0.673
10<=rrc	0.895 0.814	0.536 0.516	0.401 0.367

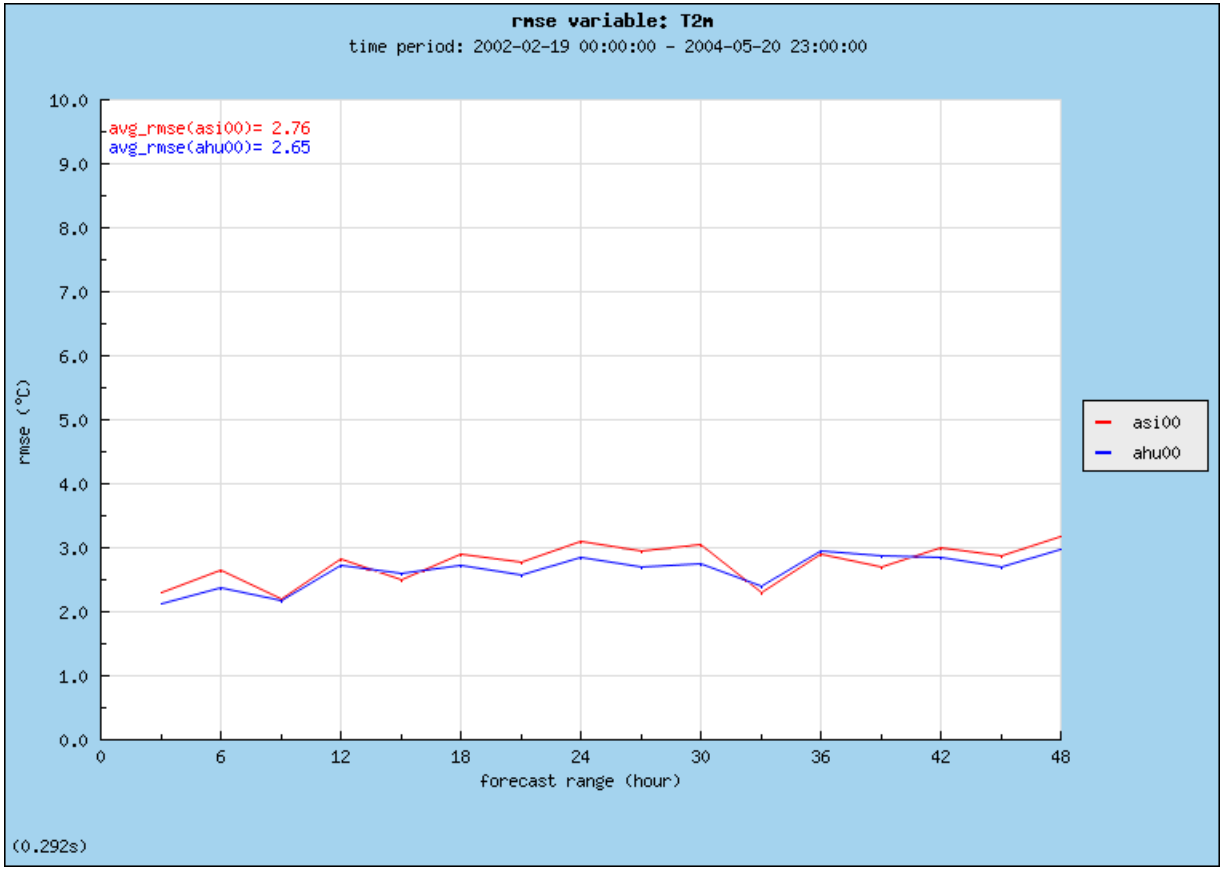
2. Comparison of ALADIN/SI & ALADIN/HU

- T2m



2. Comparison of ALADIN/SI & ALADIN/HU

- T2m



2. Comparison of ALADIN/SI & ALADIN/HU

- total cloudiness

Contingency table for parameter *n* on using model(s) asi00, ahu00 and FC=12

mod\obs	0<=n<3	3<=n<5	5<=n<7	7<=n	sum fc
0<=n<3	486 383	102 80	51 39	17 15	656 517
3<=n<5	428 440	141 144	100 98	75 74	744 756
5<=n<7	538 647	232 270	188 249	213 282	1171 1448
7<=n	588 570	302 283	402 355	642 576	1934 1784
sum obs	2040	777	741	947	sum

num_evnts:4505

PC(asi00)= 0.323
HSS(asi00)= 0.124

PC(ahu00)= 0.300
HSS(ahu00)= 0.106

class\score	BIAS	POD	FAR
0<=n<3	0.322 0.253	0.238 0.188	0.259 0.259
3<=n<5	0.958 0.973	0.181 0.185	0.810 0.810
5<=n<7	1.580 1.954	0.254 0.336	0.839 0.828
7<=n	2.042 1.884	0.678 0.608	0.668 0.677

2. Comparison of ALADIN/SI & ALADIN/HU

- 24h precipitation

Contingency table for parameter *rrc* on using model(s) asi00, ahu00 and FC=30

mod\obs	0<=rrc<0.1	0.1<=rrc<2	2<=rrc<10	10<=rrc	sum fc
0<=rrc<0.1	1557 1526	188 204	61 67	10 9	1816 1806
0.1<=rrc<2	706 706	388 346	276 307	39 45	1409 1404
2<=rrc<10	107 136	128 161	335 333	154 163	724 793
10<=rrc	16 18	19 12	148 113	276 262	459 405
sum obs	2386	723	820	479	sum

num_evnts:4408

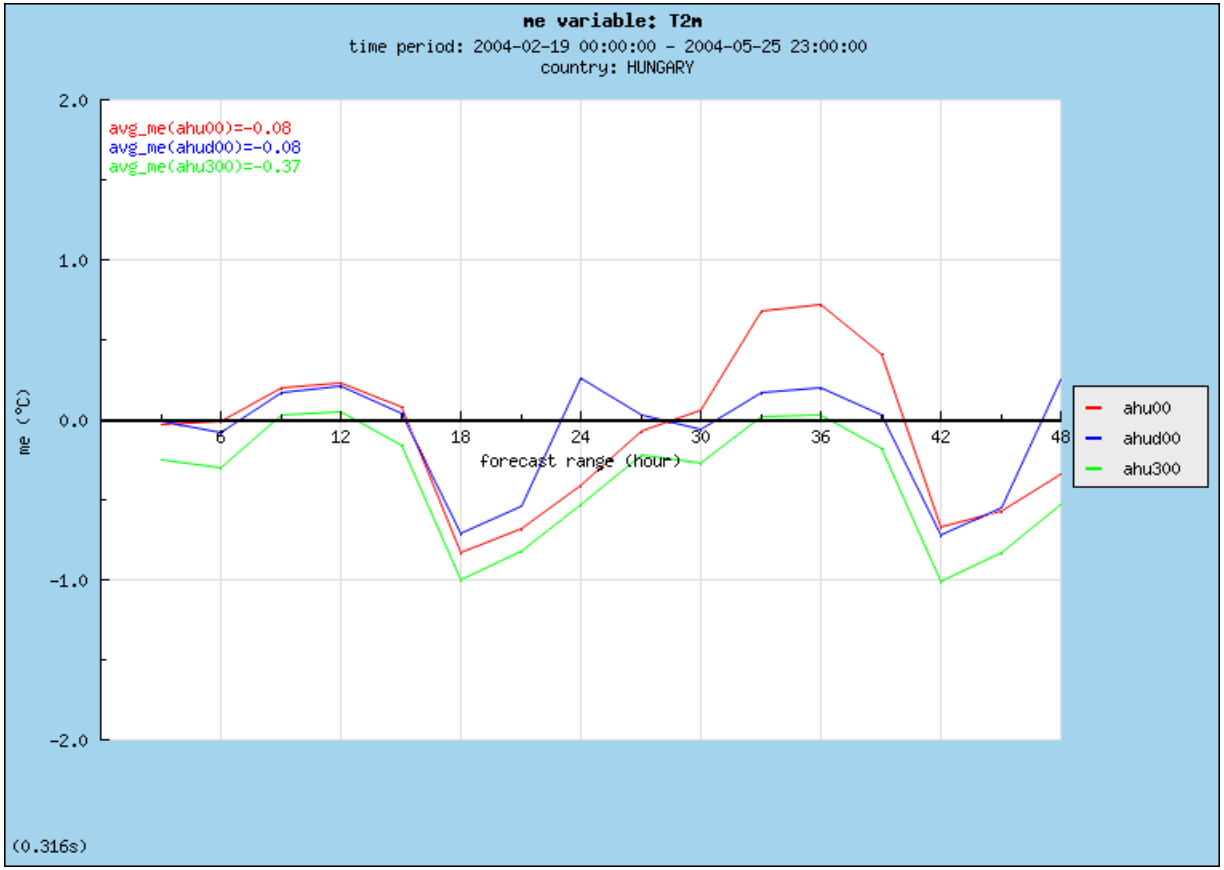
PC(asi00)= 0.580
HSS(asi00)= 0.385

PC(ahu00)= 0.560
HSS(ahu00)= 0.355

class\score	BIAS	POD	FAR
0<=rrc<0.1	0.761 0.757	0.653 0.640	0.143 0.155
0.1<=rrc<2	1.949 1.942	0.537 0.479	0.725 0.754
2<=rrc<10	0.883 0.967	0.409 0.406	0.537 0.580
10<=rrc	0.958 0.846	0.576 0.547	0.399 0.353

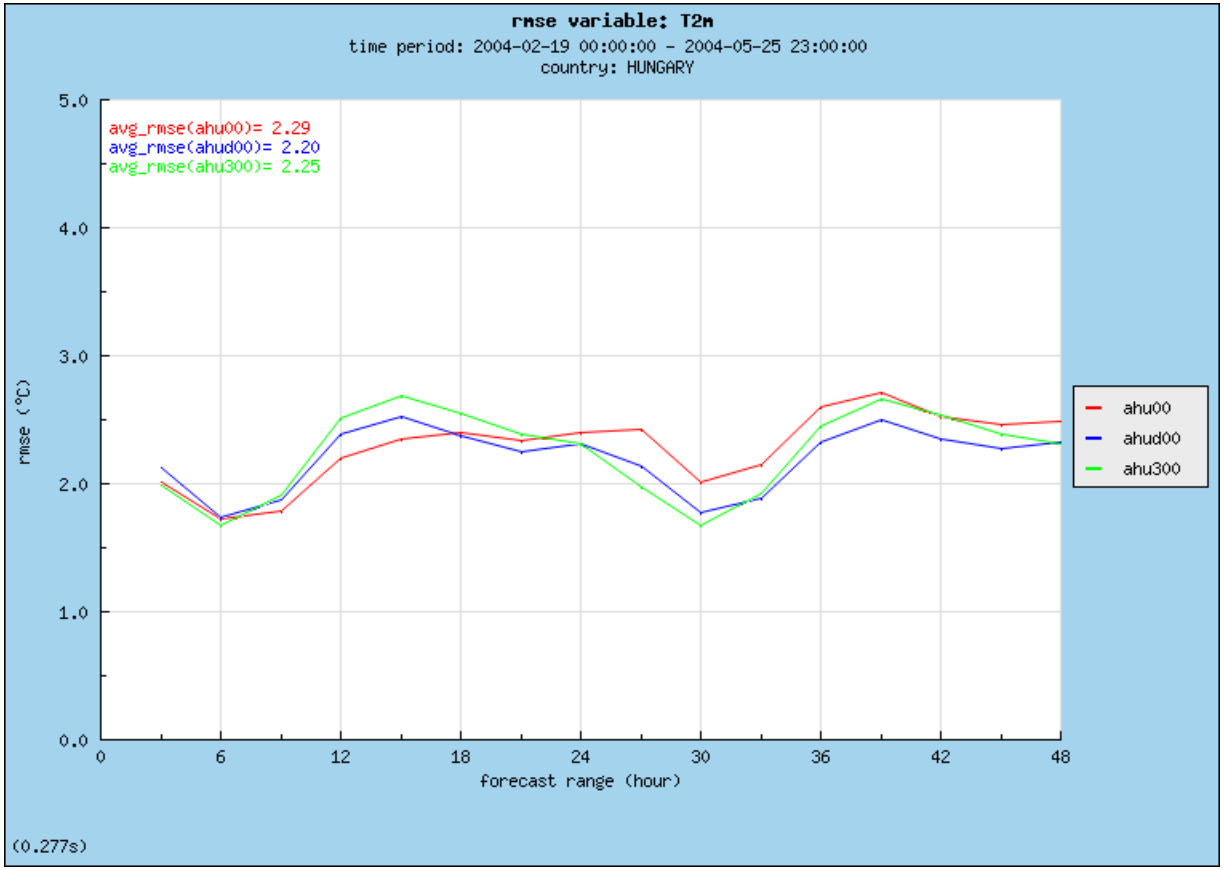
3. Comparison of 3 ALADIN/HU versions

- T2m



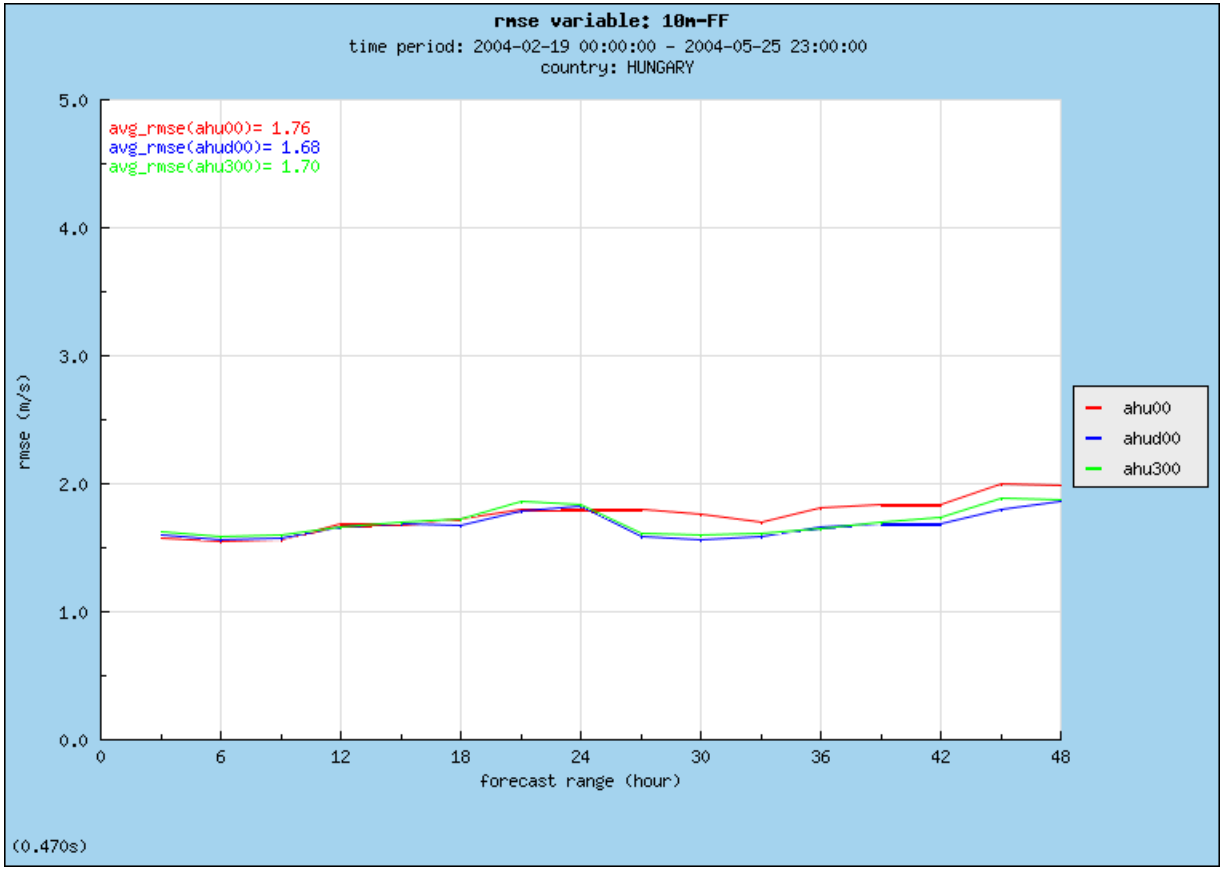
3. Comparison of 3 ALADIN/HU versions

- T2m



3. Comparison of 3 ALADIN/HU versions

- wind speed



3. Comparison of 3 ALADIN/HU versions

- wind speed

Contingency table for parameter *ff* on using model(s) ahu00, ahud00, ahu300 and FC=12

mod\obs	0<=ff<3	3<=ff<5	5<=ff<10	10<=ff	sum fc
0<=ff<3	184 184 198	152 155 164	35 34 32	0 0 0	371 373 394
3<=ff<5	50 53 37	127 138 130	89 91 91	3 0 1	269 282 259
5<=ff<10	4 1 3	46 32 31	83 82 84	9 12 11	142 127 129
10<=ff	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
sum obs	238	325	207	12	sum

num_evnts:782

PC(ahu00)= 0.504
HSS(ahu00)= 0.253

PC(ahud00)= 0.517
HSS(ahud00)= 0.270

PC(ahu300)= 0.527
HSS(ahu300)= 0.289

class\score	BIAS	POD	FAR
0<=ff<3	1.559 1.567 1.655	0.773 0.773 0.832	0.504 0.507 0.497
3<=ff<5	0.828 0.868 0.797	0.391 0.425 0.400	0.528 0.511 0.498
5<=ff<10	0.686 0.614 0.623	0.401 0.396 0.406	0.415 0.354 0.349
10<=ff	0.000 0.000 0.000	0.000 0.000 0.000	0.000 0.000 0.000

3. Comparison of 3 ALADIN/HU versions

- total cloudiness

Contingency table for parameter *n* on using model(s) ahu00, ahud00, ahu300 and FC=12

mod\obs	0<=n<3	3<=n<5	5<=n<7	7<=n	sum fc
0<=n<3	68 61 72	18 18 15	6 8 9	0 0 1	92 87 97
3<=n<5	85 84 79	30 26 29	13 10 4	6 6 3	134 126 115
5<=n<7	134 121 115	61 59 56	39 34 32	34 27 26	268 241 229
7<=n	80 101 101	82 88 91	58 64 71	68 75 78	288 328 341
sum obs	367	191	116	108	sum

num_evnts:782

PC(ahu00)= 0.262
HSS(ahu00)= 0.079

PC(ahud00)= 0.251
HSS(ahud00)= 0.069

PC(ahu300)= 0.270
HSS(ahu300)= 0.090

class\score	BIAS	POD	FAR
0<=n<3	0.251 0.237 0.264	0.185 0.166 0.196	0.261 0.299 0.258
3<=n<5	0.702 0.660 0.602	0.157 0.136 0.152	0.776 0.794 0.748
5<=n<7	2.310 2.078 1.974	0.336 0.293 0.276	0.854 0.859 0.860
7<=n	2.667 3.037 3.157	0.630 0.694 0.722	0.764 0.771 0.771

3. Comparison of 3 ALADIN/HU versions

- 24h precipitation

Contingency table for parameter *rrc* on using model(s) ahu00, ahud00, ahu300 and FC=30

mod\obs	0<=rrc<0.1	0.1<=rrc<2	2<=rrc<10	10<=rrc	sum fc
0<=rrc<0.1	292 270 267	25 20 15	8 3 3	0 0 0	325 293 285
0.1<=rrc<2	146 165 168	67 75 74	57 48 49	4 2 3	274 290 294
2<=rrc<10	9 11 11	34 31 37	63 81 81	18 20 20	124 143 149
10<=rrc	0 1 1	1 1 1	16 12 11	24 24 23	41 38 36
sum obs	447	127	144	46	sum

num_evnts:764

PC(ahu00)= 0.584
HSS(ahu00)= 0.367

PC(ahud00)= 0.589
HSS(ahud00)= 0.390

PC(ahu300)= 0.582
HSS(ahu300)= 0.384

class\score	BIAS	POD	FAR
0<=rrc<0.1	0.727 0.655 0.638	0.653 0.604 0.597	0.102 0.078 0.063
0.1<=rrc<2	2.157 2.283 2.315	0.528 0.591 0.583	0.755 0.741 0.748
2<=rrc<10	0.861 0.993 1.035	0.438 0.563 0.563	0.492 0.434 0.456
10<=rrc	0.891 0.826 0.783	0.522 0.522 0.500	0.415 0.368 0.361

Unresolved issues

- Finalize stations list
- Quality flags of observations

Next steps

- Testing the interface (will be possible soon)
- Add new scores from recent ECMWF Technical Memorandum no. 430 recommendations