

34th TWG meeting, Budapest, 22-23 March 2004

EPN Time Series Analysis: a status report

A.Kenyeres

WHAT WE ARE DOING IN GENERAL?

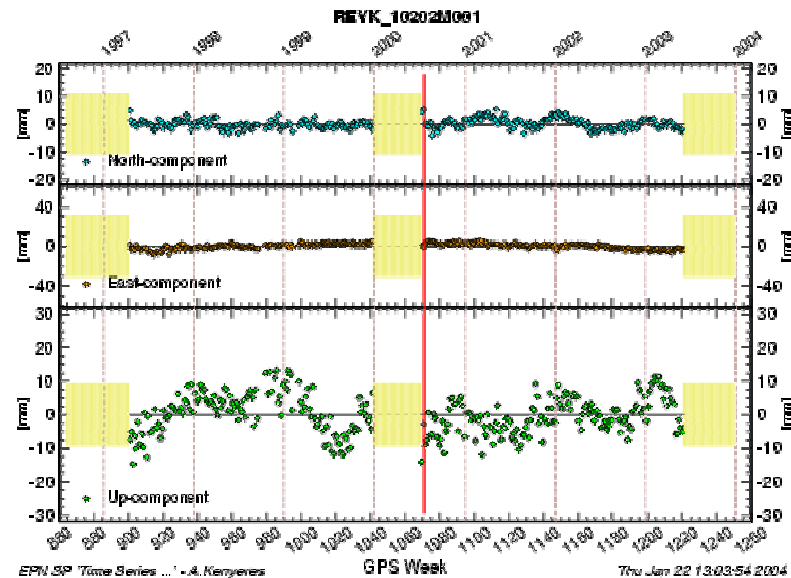
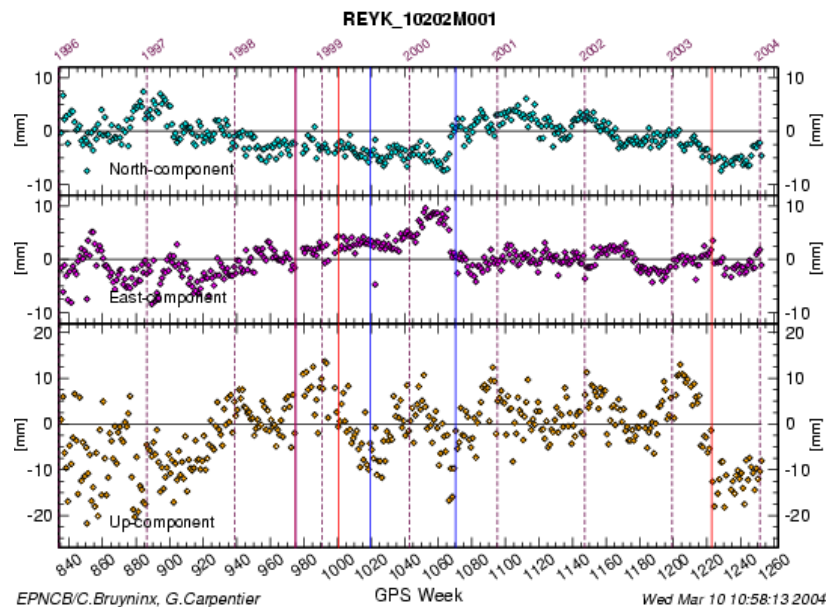
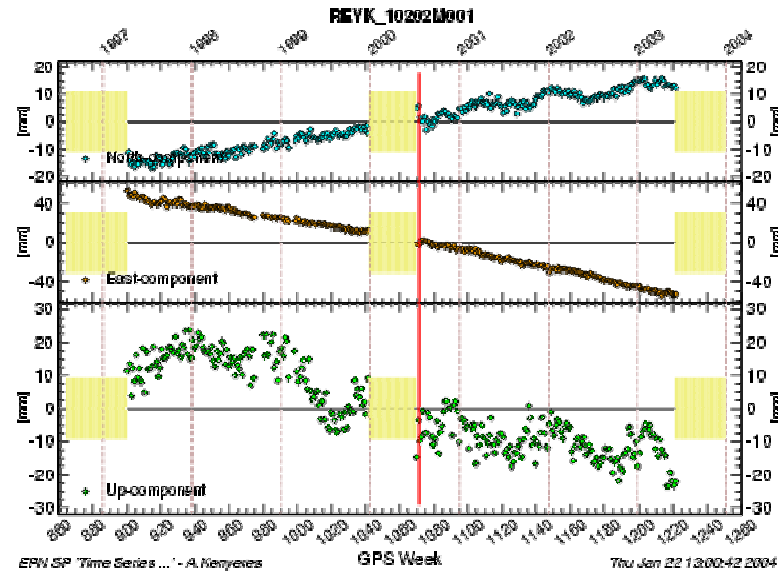
Identification, estimation, elimination of outliers, offsets from the EPN coordinate time series.

Improved time series plots on the web

Velocity estimation of the EPN sites

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Times series graph examples: REYK



WHAT ARE THE NEWS?

Newly available at the EPN website:

- Offset and outlier database
- Estimated velocities (XYZ, NEU, RES)
- Velocity maps

more regular (5 weekly) update of the results

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station	start	end
-----GPSweek--		
ACOR_13434M001	1024	1043
ACOR_13434M001	1170	1276
AJAC_10077M005	1125	1129
AMMN_22201M001	1043	1224
ANKR_20805M002	1024	1033
BOGO_12207M002	860	899
BOGO_12207M002	1123	1126
BOR1_12205M002	943	944
BORK_14268M001	1215	1221
BRST_10004M004	1083	1085
BUCU_11401M001	1000	1021
BZRG_12751M001	1091	1094
BZRG_12751M001	1120	1174
CACE_13447M001	1116	1130
CAGL_12725M003	1123	1146
CAME_12754M001	1062	1098
CREU_13432M001	992	1011
CREU_13432M001	1221	1250
DENT_13112M001	1156	1156
DOUR_13113M001	1065	1134
DRES_14108M001	1202	1250
EBRE_13410M001	874	903
EIJS_13533M001	1015	1026
GLSV_12356M001	1050	1050
GRAZ_11001M002	1113	1120
GRAS_10002M006	1215	1215
GOPE_11502M002	1034	1082
GSR1_14501M001	1100	1147
GSR1_14501M001	1168	1168
HERS_13212M007	834	1126
HFLK_11006S003	1183	6259
HOBU_14202M003	1169	1171
JOEN_10512M001	878	918
JOEN_10512M001	1196	1201
JOZE_12204M001	1184	1184
KARL_14216M001	1041	1041

**The identified
outliers**

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The estimated NEU offset components

Station_name	GPSwk	N_offs	N_rms	E_offs	E_rms	U_offs	U_rms
AJAC 10077M005	1130.	-0.0017	0.0003	0.0001	0.0002	-0.0062	0.0016
ALAC 13433M001	1130.	0.0015	0.0002	-0.0002	0.0002	-0.0056	0.0012
BELL 13431M001	1130.	0.0002	0.0003	-0.0015	0.0002	-0.0091	0.0016
BOGO 12207M002	1125.	0.0027	0.0004	0.0011	0.0002	-0.0061	0.0016
BOR1 12205M002	1012.	0.0006	0.0001	0.0046	0.0001	0.0008	0.0011
BOR1 12205M002	1011.	0.0008	0.0003	0.0050	0.0001	-0.0010	0.0016
BRUS 13101M004	1059.	-0.0032	0.0005	-0.0002	0.0004	0.0019	0.0025
BZRG 12751M001	1091.	0.0003	0.0011	-0.0012	0.0009	-0.0165	0.0021
CASC 13909S001	1029.	-0.0025	0.0008	0.0025	0.0007	0.0006	0.0040
CREU 13432M001	1109.	0.0011	0.0003	-0.0086	0.0001	-0.0020	0.0014
DELF 13502M004	1072.	0.0017	0.0003	-0.0002	0.0001	0.0150	0.0014
DELF 13502M004	1130.	0.0008	0.0004	-0.0001	0.0002	0.0075	0.0015
DENT 13112M001	1046.	0.0020	0.0003	-0.0025	0.0001	-0.0063	0.0013
DENT 13112M001	1156.	-0.0041	0.0004	0.0011	0.0003	0.0011	0.0018
DOUR 13113M001	1106.	0.0006	0.0006	0.0022	0.0004	0.0005	0.0030
EIJS 13533M001	1059.	0.0023	0.0004	0.0049	0.0003	0.0165	0.0023
EUSK 14258M003	1112.	-0.0025	0.0002	-0.0011	0.0001	0.0449	0.0012
EUSK 14258M003	1130.	-0.0025	0.0002	-0.0010	0.0001	0.0415	0.0012
GOPE 11502M002	1082.	-0.0019	0.0004	0.0036	0.0003	-0.0164	0.0022
GRAZ 11001M002	1113.	-0.0004	0.0004	-0.0027	0.0003	0.0011	0.0017
HOBU 14202M003	1172.	-0.0012	0.0006	0.0033	0.0004	0.0037	0.0028
HOFN 10204M002	1133.	-0.0045	0.0006	0.0018	0.0005	0.0663	0.0025
KARL 14216M001	1113.	0.0031	0.0003	0.0028	0.0001	0.0392	0.0013
KARL 14216M001	1170.	0.0037	0.0007	0.0053	0.0005	-0.0093	0.0037
KELY 43005M001	1133.	0.0030	0.0007	-0.0060	0.0006	-0.0292	0.0034

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ESTIMATED VELOCITIES OF THE EPN STATIONS VERSION 20JAN04
BASED ON WEEKLY SOLUTIONS OF GPSWEEKS [860 - 1249]
NORTH/EAST/UP VELOCITY COMPONENTS (ALL UNITS ARE MM/YEAR)

STATION_ID	vN	sig_vN	vE	sig_vE	vU	sig_vU
CAGL 12725M003	15.76	0.03	21.74	0.02	-1.04	0.13
NOTO 12717M003	18.44	0.05	19.74	0.04	-0.96	0.32
MAS1 31303M002	18.21	0.03	17.01	0.03	-0.98	0.19
SFER 13402M004	18.19	0.03	16.96	0.03	-1.73	0.19
BOR1 12205M002	13.63	0.02	19.15	0.02	-1.75	0.12
KOSG 13504M003	15.35	0.01	17.94	0.01	0.62	0.02
BRUS 13101M004	15.02	0.02	17.95	0.02	-0.26	0.11
ZIMM 14001M004	15.29	0.01	19.83	0.01	-0.44	0.01
GOPE 11502M002	14.39	0.02	19.91	0.02	1.33	0.11
GRAZ 11001M002	14.59	0.01	21.71	0.01	-2.22	0.01
JOZE 12204M001	13.23	0.01	21.15	0.01	-0.97	0.02
KIRU 10403M002	13.60	0.03	15.57	0.02	4.14	0.19
WTZR 14201M010	15.44	0.01	19.75	0.01	-1.21	0.05
LAMA 12209M001	13.11	0.02	19.33	0.02	-0.11	0.12
MEDI 12711M003	17.61	0.02	22.69	0.02	-2.33	0.11
ZWEN 12330M001	9.76	0.04	21.62	0.03	-1.09	0.20
PENC 11206M006	13.86	0.02	21.74	0.02	-0.92	0.13
THU1 43001M001	5.68	0.04	-20.57	0.05	0.28	0.43
KELY 43005M001	12.51	0.04	-16.43	0.04	-12.56	0.24
UPAD 12750M002	16.69	0.03	20.39	0.02	-2.57	0.17
DENT 13112M001	15.70	0.03	18.16	0.02	-1.04	0.13
DOUR 13113M001	14.12	0.03	17.30	0.02	0.07	0.13
DELF 13502M004	15.19	0.03	17.43	0.02	-1.90	0.12
VILL 13406M001	16.01	0.01	19.43	0.01	-1.37	0.02
MATE 12734M008	20.25	0.01	22.28	0.00	-1.02	0.01
HFLK 11006S003	15.58	0.03	20.68	0.02	-0.23	0.15
ANKR 20805M002	10.54	0.09	1.81	0.08	-0.66	0.63
GRAS 10002M006	14.95	0.01	20.37	0.01	-0.76	0.02
VIL0 10424M001	13.36	0.03	15.78	0.02	7.70	0.14

The estimated
NEU velocities

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ESTIMATED VELOCITIES OF THE EPN STATIONS VERSION 20JAN04
BASED ON WEEKLY SOLUTIONS OF GPSWEEKS [860 - 1249]
GEOCENTRIC VELOCITY COMPONENTS (ALL UNITS ARE MM/YEAR)

STATION_ID	vX	sig_vX	vY	sig_vY	vZ	sig_vZ
CAGL 12725M003	-14.01	0.10	19.80	0.03	11.57	0.08
NOTO 12717M003	-16.54	0.25	16.01	0.08	14.18	0.19
MAS1 31303M002	-4.42	0.16	18.90	0.05	15.66	0.09
SFER 13402M004	-10.30	0.16	18.18	0.03	13.60	0.12
BOR1 12205M002	-16.96	0.07	14.83	0.03	6.95	0.09
KOSG 13504M003	-13.50	0.01	16.66	0.01	9.90	0.01
BRUS 13101M004	-13.13	0.07	17.00	0.02	9.29	0.08
ZIMM 14001M004	-13.94	0.01	18.17	0.01	10.13	0.01
GOPE 11502M002	-14.90	0.07	16.66	0.03	10.29	0.09
GRAZ 11001M002	-17.55	0.01	17.66	0.01	8.31	0.01
JOZE 12204M001	-17.88	0.01	15.78	0.01	7.36	0.01
KIRU 10403M002	-15.88	0.07	10.59	0.03	8.96	0.18
WTZR 14201M010	-16.56	0.03	16.48	0.01	9.19	0.04
LAMA 12209M001	-16.80	0.07	14.33	0.03	7.64	0.10
MEDI 12711M003	-18.30	0.08	19.40	0.02	10.93	0.08
ZWEN 12330M001	-19.89	0.10	12.13	0.07	4.60	0.16
PENC 11206M006	-17.45	0.08	16.92	0.03	8.63	0.10
THU1 43001M001	-21.15	0.06	-2.35	0.09	1.59	0.42
KELY 43005M001	-23.11	0.08	2.40	0.08	-6.67	0.22
UPAD 12750M002	-17.60	0.12	17.14	0.03	9.89	0.12
DENT 13112M001	-13.90	0.09	17.37	0.02	9.09	0.10
DOUR 13113M001	-12.14	0.09	16.38	0.02	9.11	0.10
DELF 13502M004	-14.43	0.08	16.38	0.02	7.86	0.10
VILL 13406M001	-10.06	0.01	20.18	0.01	11.29	0.01
MATE 12734M008	-19.78	0.01	17.32	0.01	14.70	0.01
HFLK 11006S003	-15.46	0.10	17.98	0.03	10.40	0.11
ANKR 20805M002	-7.09	0.41	-2.41	0.27	7.67	0.40
GRAS 10002M006	-13.26	0.01	18.91	0.01	10.27	0.01
VIL0 10424M001	-12.93	0.07	12.62	0.03	12.67	0.13

The estimated
XYZ velocities

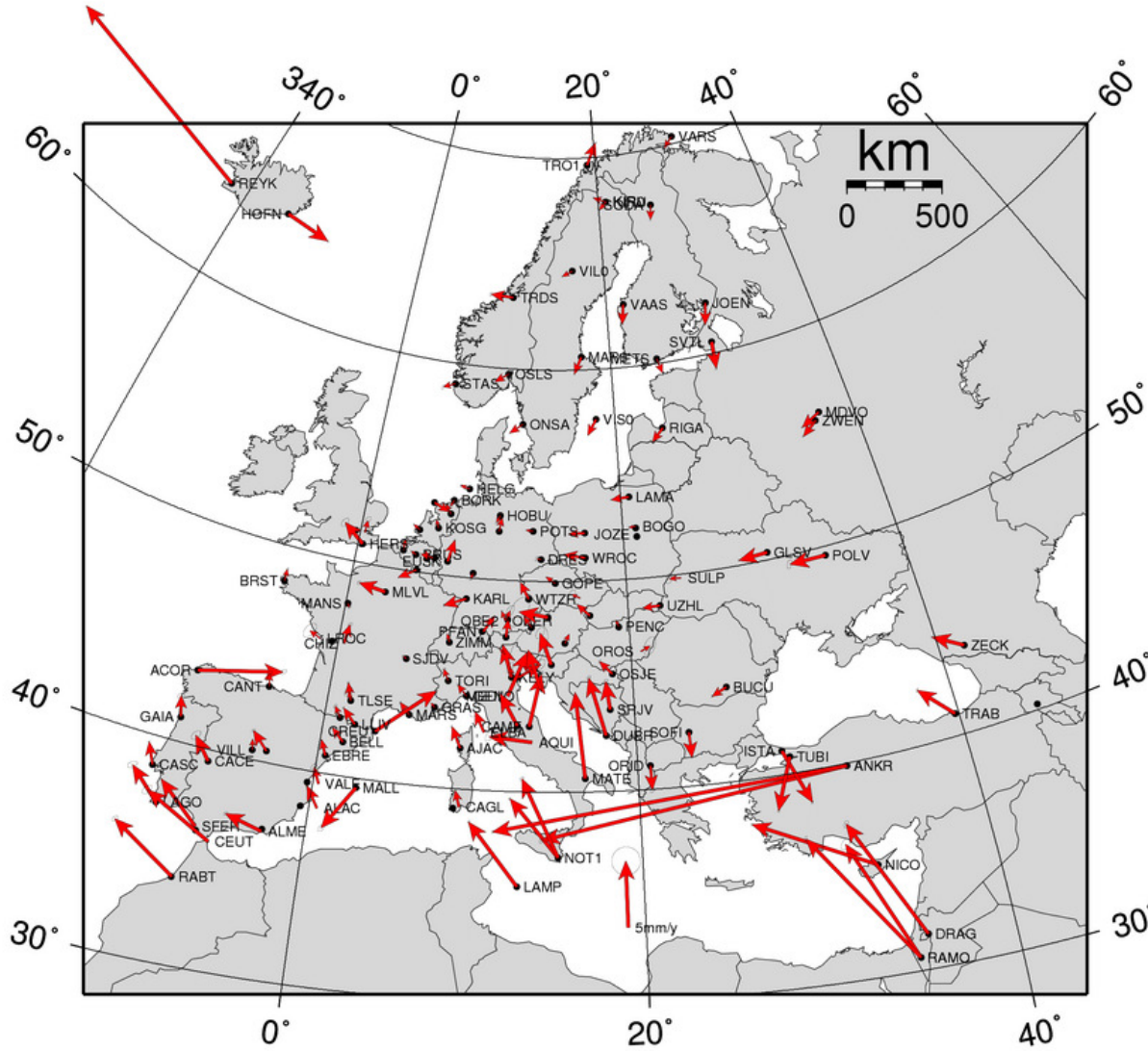
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ESTIMATED VELOCITIES OF THE EPN STATIONS VERSION 20JAN04
BASED ON WEEKLY SOLUTIONS OF GPSWEEKS [860 - 1249]
RESIDUAL VELOCITY COMPONENTS (ALL UNITS ARE MM/YEAR)
ALL VALUES ARE RELATIVE TO THE EURASIAN PLATE!

STATION_ID	vN	sig_vN	vE	sig_vE	vU	sig_vU
CAGL 12725M003	1.21	0.03	-0.36	0.02	-1.04	0.13
NOTO 12717M003	4.47	0.05	-3.61	0.04	-0.96	0.32
MAS1 31303M002	2.96	0.03	-3.85	0.03	-0.98	0.19
SFER 13402M004	2.92	0.03	-3.28	0.03	-1.73	0.19
BOR1 12205M002	-0.05	0.02	-1.22	0.02	-1.75	0.12
KOSG 13504M003	0.59	0.01	-0.23	0.01	0.62	0.02
BRUS 13101M004	0.21	0.02	-0.37	0.02	-0.26	0.11
ZIMM 14001M004	0.66	0.01	-0.23	0.01	-0.44	0.01
GOPE 11502M002	0.49	0.02	-0.68	0.02	1.33	0.11
GRAZ 11001M002	0.68	0.01	0.32	0.01	-2.22	0.01
JOZE 12204M001	0.04	0.01	0.01	0.01	-0.97	0.02
KIRU 10403M002	0.40	0.03	-0.89	0.02	4.14	0.19
WTZR 14201M010	1.25	0.01	-0.65	0.01	-1.21	0.05
LAMA 12209M001	-0.11	0.02	-1.37	0.02	-0.11	0.12
MEDI 12711M003	3.33	0.02	1.33	0.02	-2.33	0.11
ZWEN 12330M001	-0.84	0.04	-1.26	0.03	-1.09	0.20
PENC 11206M006	0.46	0.02	-0.17	0.02	-0.92	0.13
THU1 43001M001	-2.09	0.04	-13.53	0.05	0.28	0.43
KELY 43005M001	1.11	0.04	-16.69	0.04	-12.56	0.24
UPAD 12750M002	2.43	0.03	-0.76	0.02	-2.57	0.17
DENT 13112M001	0.81	0.03	0.04	0.02	-1.04	0.13
DOUR 13113M001	-0.74	0.03	-1.27	0.02	0.07	0.13
DELF 13502M004	0.34	0.03	-0.51	0.02	-1.90	0.12
VILL 13406M001	0.78	0.01	-0.14	0.01	-1.37	0.02
MATE 12734M008	6.49	0.01	-0.64	0.00	-1.02	0.01
HFLK 11006S003	1.33	0.03	0.11	0.02	-0.23	0.15
ANKR 20805M002	-0.78	0.09	-23.54	0.08	-0.66	0.63
GRAS 10002M006	0.32	0.01	-0.30	0.01	-0.76	0.02
VIL0 10424M001	-0.38	0.03	-0.74	0.02	7.70	0.14

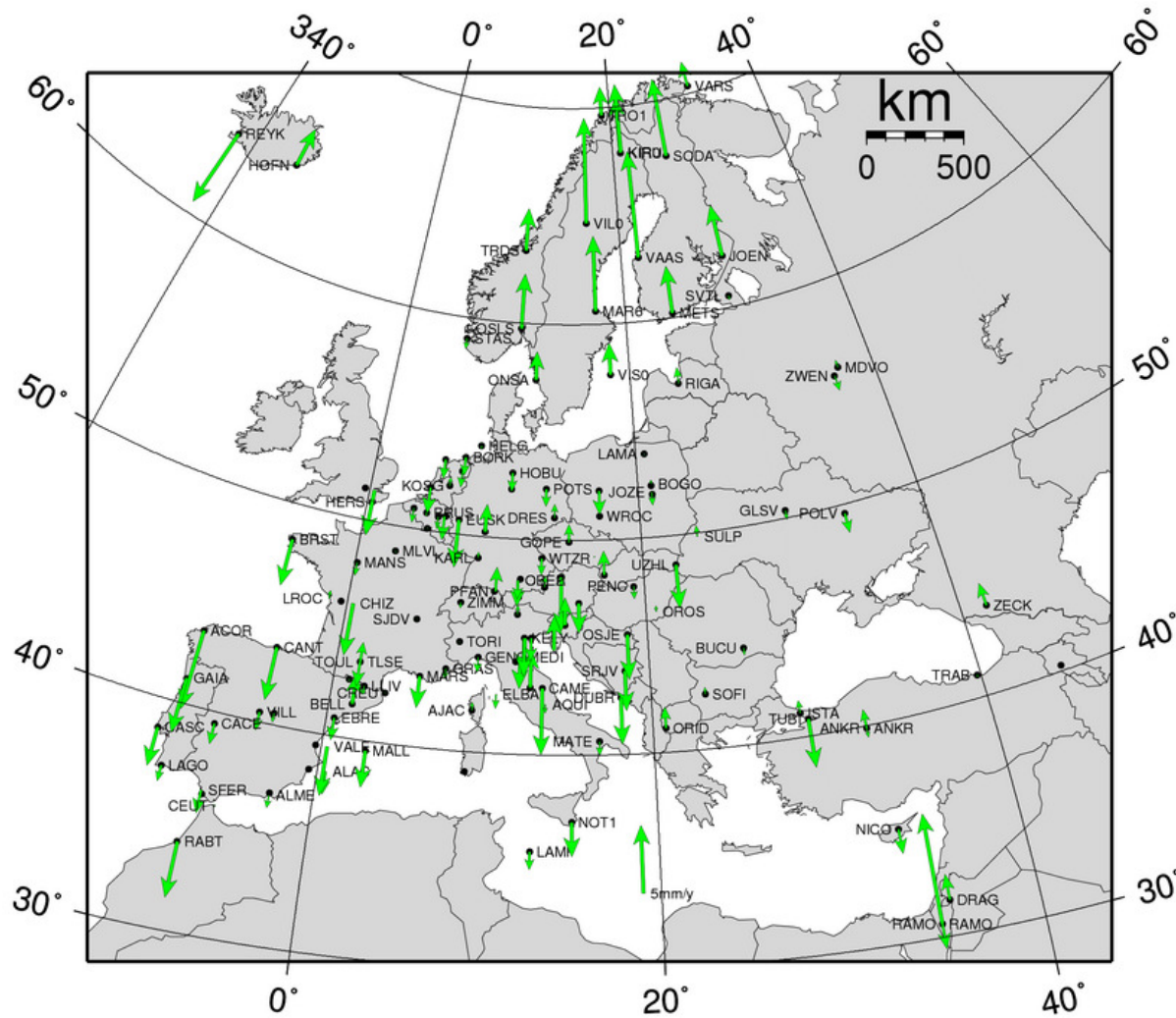
The estimated
RES velocities

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The estimated NE velocities

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**The estimated
UP velocities**