



Supplement of

Effects of vernal equinox solar eclipse on temperature and wind direction in Switzerland

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Table S1. Swiss FluxNet sites with high-resolution (20 Hz) turbulent flux measurements and meteorological measurements at the temporal resolution specified in the last column.

| CODE | Site Name | Ecosystem Type | Latitude | Longitude | Elevation | Met Interval ^a |
|--------|------------------|-------------------|---------------|--------------|-----------|---------------------------|
| CH-AWS | Alp Weissenstein | Alpine Pasture | 46°34'59.5" N | 9°47'25.5" E | 1978 m | 10 min |
| CH-CHA | Chamau | Valley Grassland | 47°12'36.8" N | 8°24'37.6" E | 393 m | 30 min |
| CH-DAV | Davos | Deciduous Forest | 46°48'55.2" N | 9°51'21.3" E | 1639 m | 1 min/10 min |
| CH-FRU | Früebüel | Montane Grassland | 47°06'57.0" N | 8°32'16.0" E | 982 m | 30 min |
| CH-LAE | Lägeren | Mixed Forest | 47°28'42.0" N | 8°21'51.8" E | 682 m | 30 min/10 min |
| CH-OE2 | Oensingen | Cropland | 47°17'11.1" N | 7°44'01.5" E | 452 m | 1 min |

^a if two averaging intervals are given, then the first relates to all-wave radiation measurements and the second to temperature and other standard meteorological measurements during the 2015 eclipse

Table S2. MeteoSwiss standard weather stations used in this study with temperature drop ΔT and timing $t(\Delta T)$ (hour:minute CET). Measurement interval was 10 minutes.

| CODE | Station Name | Elevation (m) | Longitude (E) | Latitude (N) | ΔT (K) | $t(\Delta T)$ |
|------|-------------------|---------------|---------------|--------------|----------------|---------------|
| ABO | Adelboden | 1326 | 7°33'37.5" | 46°29'32.1" | -1.56 | 09:50 |
| AIG | Aigle | 381 | 6°55'27.9" | 46°19'35.9" | -1.05 | 10:00 |
| ALT | Altdorf | 438 | 8°37'18.5" | 46°53'13.3" | -2.89 | 09:40 |
| AND | Andeer | 987 | 9°25'54.9" | 46°36'36.4" | -0.49 | 10:20 |
| ANT | Andermatt | 1438 | 8°34'50.0" | 46°37'51.3" | -1.32 | 09:30 |
| ARD | Arosa | 1840 | 9°40'28.3" | 46°46'45.0" | -3.82 | 09:40 |
| ARH | Altenrhein | 398 | 9°34'00.5" | 47°29'01.2" | -1.35 | 10:20 |
| ATT | Les Attelas | 2730 | 7°16'07.5" | 46°05'56.8" | -0.46 | 10:30 |
| BAS | Basel / Binningen | 316 | 7°35'00.8" | 47°32'27.7" | -0.32 | 09:30 |
| BEH | Passo del Bernina | 2260 | 10°01'10.5" | 46°24'33.0" | -0.98 | 10:20 |
| BER | Bern / Zollikofen | 552 | 7°27'50.4" | 46°59'26.7" | -1.46 | 09:50 |
| BEZ | Beznau | 325 | 8°13'59.8" | 47°33'26.0" | -0.77 | 10:00 |
| BIE | Bière | 683 | 6°20'32.6" | 46°31'29.5" | -1.90 | 09:40 |

Table S2. (continued)

| CODE | Station Name | Elevation (m) | Longitude (E) | Latitude (N) | ΔT (K) | $t(\Delta T)$ |
|------|--------------------------|---------------|---------------|--------------|----------------|---------------|
| BIN | Binn | 1448 | 8°11'27.3" | 46°21'55.7" | -2.57 | 09:50 |
| BIZ | Bischofszell | 470 | 9°14'05.0" | 47°29'50.6" | -1.16 | 10:00 |
| BLA | Blatten, Lötschental | 1538 | 7°49'23.5" | 46°25'13.6" | -0.87 | 10:10 |
| BOL | Boltigen | 820 | 7°23'03.1" | 46°37'24.7" | -1.11 | 09:50 |
| BOU | Bouveret | 374 | 6°51'25.2" | 46°23'36.4" | -1.63 | 09:10 |
| BRL | La Brévine | 1050 | 6°36'37.0" | 46°59'01.8" | -2.71 | 09:20 |
| BUF | Buffalora | 1968 | 10°16'01.9" | 46°38'53.3" | -1.85 | 09:40 |
| BUS | Buchs / Aarau | 386 | 8°04'46.0" | 47°23'03.6" | -1.47 | 09:40 |
| CDF | La Chaux-de-Fonds | 1018 | 6°47'32.3" | 47°04'58.6" | -2.71 | 09:40 |
| CEV | Cevio | 417 | 8°36'11.4" | 46°19'13.8" | -0.20 | 10:20 |
| CGI | Nyon / Changins | 455 | 6°13'39.9" | 46°24'03.7" | -1.41 | 09:20 |
| CHA | Chasseral | 1599 | 7°03'15.8" | 47°07'54.4" | -0.92 | 09:40 |
| CHB | Les Charbonnières | 1045 | 6°18'44.7" | 46°40'12.5" | -2.75 | 09:40 |
| CHD | Château-d'Oex | 1029 | 7°08'22.7" | 46°28'47.3" | -1.25 | 10:00 |
| CHM | Chaumont | 1136 | 6°58'43.7" | 47°02'57.0" | -1.71 | 09:40 |
| CHU | Chur | 556 | 9°31'50.1" | 46°52'13.5" | -1.40 | 10:00 |
| CHZ | Cham | 442 | 8°27'52.7" | 47°11'17.8" | -0.59 | 10:00 |
| CIM | Cimetta | 1661 | 8°47'29.9" | 46°12'01.5" | -1.09 | 09:30 |
| CMA | Crap Masegn | 2480 | 9°10'48.0" | 46°50'32.3" | -0.01 | 10:20 |
| COM | Acquarossa / Comprovasco | 575 | 8°56'08.4" | 46°27'33.9" | -1.18 | 10:00 |
| COV | Piz Corvatsch | 3302 | 9°49'16.5" | 46°25'04.8" | -0.85 | 09:50 |
| COY | Courtelary | 695 | 7°05'26.3" | 47°10'50.9" | -1.72 | 10:00 |
| CRM | Cressier | 431 | 7°03'32.8" | 47°02'51.4" | -0.54 | 09:40 |
| DAV | Davos | 1594 | 9°50'36.6" | 46°48'46.6" | -2.30 | 09:40 |
| DEM | Delémont | 439 | 7°20'58.4" | 47°21'06.1" | -1.48 | 10:40 |
| DIA | Les Diablerets | 2964 | 7°12'13.6" | 46°19'36.3" | -0.95 | 09:40 |
| DIS | Disentis / Sedrun | 1197 | 8°51'12.4" | 46°42'23.5" | -2.30 | 10:00 |
| DOL | La Dôle | 1669 | 6°05'58.1" | 46°25'28.9" | -0.26 | 10:30 |
| EBK | Ebnat-Kappel | 623 | 9°06'30.5" | 47°16'24.2" | -0.87 | 10:10 |
| EGH | Eggishorn | 2893 | 8°05'33.8" | 46°25'35.5" | -2.19 | 09:30 |
| EGO | Egolzwil | 521 | 8°00'17.1" | 47°10'45.9" | -1.27 | 09:50 |
| EIN | Einsiedeln | 910 | 8°45'23.6" | 47°07'58.9" | -0.92 | 10:20 |
| ELM | Elm | 958 | 9°10'31.3" | 46°55'25.5" | -1.84 | 10:00 |
| ENG | Engelberg | 1035 | 8°24'37.6" | 46°49'18.8" | -3.08 | 09:50 |
| EVI | Evionnaz | 482 | 7°01'36.3" | 46°10'58.6" | -0.10 | 09:50 |
| EVO | Evolène / Villa | 1825 | 7°30'31.2" | 46°06'43.7" | -2.93 | 10:00 |
| FAH | Fahy | 596 | 6°56'27.9" | 47°25'25.7" | -2.28 | 10:00 |
| FLU | Flühli, LU | 939 | 8°01'13.2" | 46°53'22.0" | -1.24 | 10:00 |
| FRE | Bullet / La Frétaz | 1205 | 6°34'34.7" | 46°50'26.2" | -1.82 | 09:40 |
| GEN | Monte Generoso | 1600 | 9°01'04.3" | 45°55'39.3" | -0.85 | 09:40 |
| GES | Gersau | 519 | 8°31'24.4" | 46°59'45.8" | -0.44 | 09:50 |
| GIH | Giswil | 471 | 8°11'24.7" | 46°50'58.2" | -1.79 | 09:40 |
| GLA | Glarus | 516 | 9°04'00.9" | 47°02'04.5" | -2.22 | 09:50 |
| GOA | Göscheneralp | 1745 | 8°29'59.9" | 46°38'50.7" | -2.12 | 09:30 |
| GOE | Gösgen | 380 | 7°58'25.2" | 47°21'46.9" | -0.94 | 09:40 |
| GOR | Gornergrat | 3129 | 7°47'08.7" | 45°59'01.1" | -0.48 | 09:40 |
| GRA | Fribourg / Posieux | 646 | 7°06'49.3" | 46°46'17.0" | -0.96 | 09:50 |
| GRC | Grächen | 1605 | 7°50'12.5" | 46°11'43.1" | -0.48 | 09:50 |
| GRE | Grenchen | 430 | 7°24'54.4" | 47°10'44.7" | -1.37 | 09:50 |
| GRH | Grimsel Hospiz | 1980 | 8°19'59.7" | 46°34'18.1" | 0.03 | 09:50 |
| GRO | Grono | 323 | 9°09'49.5" | 46°15'18.3" | -0.34 | 10:00 |
| GSB | Col du Grand St-Bernard | 2472 | 7°10'14.9" | 45°52'07.6" | -1.67 | 09:50 |
| GUE | Gütsch ob Andermatt | 2283 | 8°36'54.2" | 46°39'08.8" | -0.37 | 10:00 |
| GUT | Güttingen | 440 | 9°16'45.8" | 47°36'06.1" | -1.25 | 09:50 |
| GVE | Genève-Cointrin | 412 | 6°07'39.9" | 46°14'51.0" | -0.81 | 09:30 |
| HAI | Salen-Reutenen | 718 | 9°01'26.1" | 47°39'04.4" | -2.32 | 09:50 |
| HLL | Hallau | 419 | 8°28'13.7" | 47°41'50.2" | -1.08 | 09:50 |

Table S2. (continued)

| CODE | Station Name | Elevation (m) | Longitude (E) | Latitude (N) | ΔT (K) | $t(\Delta T)$ |
|------|-------------------------|---------------|---------------|--------------|----------------|---------------|
| HOE | Hörnli | 1144 | 8°56'29.9" | 47°22'15.1" | -2.40 | 10:00 |
| ILZ | Ilanz | 698 | 9°12'55.2" | 46°46'30.1" | -0.77 | 09:50 |
| INT | Interlaken | 577 | 7°52'12.5" | 46°40'20.1" | -2.29 | 09:50 |
| JUN | Jungfrauoch | 3580 | 7°59'07.2" | 46°32'50.8" | -0.68 | 10:00 |
| KLO | Zürich / Kloten | 426 | 8°32'09.9" | 47°28'46.6" | -1.49 | 09:50 |
| KOP | Koppigen | 484 | 7°36'19.7" | 47°07'07.9" | -2.20 | 09:40 |
| LAE | Lägern | 845 | 8°23'50.0" | 47°28'55.0" | -0.21 | 10:10 |
| LAG | Langnau i.E. | 745 | 7°48'23.2" | 46°56'22.7" | -1.33 | 10:00 |
| LEI | Leibstadt | 341 | 8°11'17.7" | 47°35'50.2" | -1.03 | 09:50 |
| LUG | Lugano | 273 | 8°57'37.1" | 46°00'15.2" | -0.14 | 09:40 |
| LUZ | Luzern | 454 | 8°18'03.5" | 47°02'11.2" | -0.34 | 10:20 |
| MAG | Magadino / Cadenazzo | 203 | 8°56'01.2" | 46°09'36.1" | -0.48 | 10:10 |
| MAH | Mathod | 437 | 6°34'04.7" | 46°44'13.1" | -2.30 | 09:50 |
| MAS | Marsens | 714 | 7°04'10.8" | 46°39'23.3" | -1.48 | 09:40 |
| MER | Meiringen | 588 | 8°10'09.3" | 46°43'56.0" | -1.08 | 09:40 |
| MLS | Le Moléson | 1974 | 7°01'04.1" | 46°32'46.2" | -1.09 | 09:30 |
| MOA | Mosen | 453 | 8°13'58.1" | 47°14'37.8" | -0.72 | 09:50 |
| MOE | Möhlín | 344 | 7°52'40.5" | 47°34'19.9" | -1.23 | 10:00 |
| MRP | Monte Rosa-Plattje | 2885 | 7°48'52.5" | 45°57'23.9" | -1.61 | 10:10 |
| MTR | Matro | 2171 | 8°55'29.1" | 46°24'36.4" | -0.03 | 09:50 |
| MUB | Mühleberg | 479 | 7°16'41.3" | 46°58'23.7" | -0.60 | 09:40 |
| MVE | Montana | 1427 | 7°27'38.8" | 46°17'55.5" | -1.58 | 10:00 |
| NAP | Napf | 1403 | 7°56'24.2" | 47°00'16.8" | -0.58 | 08:50 |
| NAS | Naluns / Schlivera | 2400 | 10°15'41.0" | 46°49'01.8" | -0.09 | 08:50 |
| NEU | Neuchâtel | 485 | 6°57'14.8" | 47°00'01.6" | -1.75 | 10:20 |
| ORO | Oron | 827 | 6°51'29.6" | 46°34'20.1" | -1.82 | 09:50 |
| OTL | Locarno / Monti | 366 | 8°47'14.7" | 46°10'21.2" | -0.22 | 09:40 |
| PAY | Payerne | 490 | 6°56'32.7" | 46°48'41.7" | -2.19 | 10:10 |
| PIL | Pilatus | 2106 | 8°15'08.4" | 46°58'43.9" | -2.68 | 09:40 |
| PIO | Piotta | 990 | 8°41'17.3" | 46°30'53.2" | -0.91 | 10:30 |
| PLF | Plaffeien | 1042 | 7°15'57.6" | 46°44'51.6" | -2.21 | 09:50 |
| PMA | Piz Martegnas | 2670 | 9°31'46.4" | 46°34'37.9" | -1.97 | 09:00 |
| PSI | PSI Würenlingen | 334 | 8°13'45.9" | 47°32'18.4" | -1.87 | 10:00 |
| PUY | Pully | 455 | 6°40'02.7" | 46°30'44.3" | -0.44 | 09:40 |
| RAG | Bad Ragaz | 496 | 9°30'09.3" | 47°00'59.9" | -0.55 | 09:50 |
| REH | Zürich / Affoltern | 443 | 8°31'04.4" | 47°25'39.6" | -0.08 | 10:40 |
| ROB | Poschiavo / Robbia | 1078 | 10°3'40.2" | 46°20'47.9" | -0.70 | 10:40 |
| ROE | Robièi | 1896 | 8°30'48.2" | 46°26'35.0" | -2.13 | 09:30 |
| ROG | Rossberg | 1119 | 8°32'51.4" | 47°04'24.8" | 0.23 | 09:50 |
| RUE | Rünenberg | 611 | 7°52'45.6" | 47°26'04.4" | -1.67 | 09:40 |
| SAE | Säntis | 2502 | 9°20'37.1" | 47°14'58.0" | -0.94 | 09:50 |
| SAG | Sattel-Aegeri | 790 | 8°38'13.1" | 47°04'51.8" | -2.34 | 09:50 |
| SAM | Samedan | 1708 | 9°52'44.3" | 46°31'35.0" | -1.02 | 09:50 |
| SBE | S. Bernardino | 1638 | 9°11'04.8" | 46°27'48.8" | -1.23 | 09:50 |
| SBO | Stabio | 353 | 8°55'56.5" | 45°50'36.2" | -1.74 | 09:40 |
| SCU | Scuol | 1303 | 10°16'59.6" | 46°47'35.8" | -2.18 | 09:40 |
| SHA | Schaffhausen | 438 | 8°37'12.3" | 47°41'23.2" | -0.62 | 09:50 |
| SIA | Segl-Maria | 1804 | 9°45'44.4" | 46°25'56.4" | -1.93 | 09:30 |
| SIO | Sion | 482 | 7°19'48.6" | 46°13'06.9" | -1.57 | 09:40 |
| SMA | Zürich / Fluntern | 555 | 8°33'56.7" | 47°22'40.4" | -0.07 | 10:10 |
| SMM | Sta. Maria, Val Müstair | 1383 | 10°25'34.7" | 46°36'08.1" | -1.61 | 10:00 |
| SPF | Schüpfheim | 742 | 8°00'44.8" | 46°56'49.3" | -1.72 | 09:50 |
| SRS | Schiers | 626 | 9°40'05.0" | 46°58'31.8" | -2.00 | 09:50 |
| STG | St. Gallen | 775 | 9°23'54.5" | 47°25'31.6" | -1.49 | 10:10 |
| STP | Stöckalp | 1070 | 8°16'52.3" | 46°48'00.0" | -1.62 | 10:00 |
| TAE | Aadorf / Tänikon | 539 | 8°54'17.6" | 47°28'47.5" | -0.61 | 10:00 |
| THU | Thun | 570 | 7°35'06.8" | 46°44'59.5" | -0.42 | 09:50 |
| TIT | Titlis | 3040 | 8°25'32.9" | 46°46'13.8" | -1.57 | 10:20 |

Table S2. (continued)

| CODE | Station Name | Elevation (m) | Longitude (E) | Latitude (N) | ΔT (K) | $t(\Delta T)$ |
|--------|------------------------|---------------|---------------|--------------|----------------|---------------|
| TSG | Arosa / Tschuggen | 1840 | 9°39'58.8" | 46°46'51.4" | -5.44 | 09:40 |
| ULR | Ulrichen | 1345 | 8°18'29.3" | 46°30'17.4" | 0.25 | 08:40 |
| VAB | Valbella | 1569 | 9°33'15.9" | 46°45'18.1" | -0.77 | 10:00 |
| VAD | Vaduz | 457 | 9°31'03.0" | 47°07'38.8" | 0.15 | 09:50 |
| VIO | Vicosoprano | 1089 | 9°37'40.1" | 46°21'10.9" | -1.68 | 10:10 |
| VIS | Visp | 639 | 7°50'34.6" | 46°18'10.3" | -0.76 | 09:50 |
| VIT | Villars-Tiercelin | 859 | 6°42'36.3" | 46°37'18.4" | -1.46 | 09:50 |
| VSBLI | Blinnen | 1530 | 8°15'35.3" | 46°27'25.2" | 0.01 | 10:10 |
| VSBRU | Bruchji | 2300 | 7°58'19.9" | 46°22'43.0" | -3.60 | 09:10 |
| VSBS | Bourg-St-Pierre | 1826 | 7°11'53.6" | 45°55'39.3" | -3.09 | 10:10 |
| VSCHO | Choëx | 896 | 6°57'40.9" | 46°13'55.7" | -2.09 | 09:40 |
| VSCOL | Les Collons | 1787 | 7°23'14.5" | 46°10'44.3" | -0.51 | 09:50 |
| VSDER | Derborence | 1380 | 7°13'57.0" | 46°17'18.6" | -4.14 | 09:40 |
| VSDUR | Durnand | 2000 | 7°05'02.7" | 46°03'06.4" | -2.38 | 09:50 |
| VSERG | Ergisch | 1133 | 7°42'58.7" | 46°17'34.8" | -1.51 | 09:40 |
| VSISE | Isérables | 1237 | 7°14'55.5" | 46°09'39.3" | -1.00 | 08:40 |
| VSREN | Nendaz | 1938 | 7°18'41.1" | 46°07'19.5" | -3.19 | 09:40 |
| VSSIE | Sierre | 535 | 7°33'23.0" | 46°17'55.6" | -3.56 | 09:50 |
| VSSOR | Sorniot-Lac Inférieur | 2005 | 7°06'00.2" | 46°10'01.0" | -5.78 | 09:50 |
| VSTRI | Trient | 1290 | 6°59'41.6" | 46°3'30.2" | -1.97 | 09:30 |
| VSTSN | Tsanfleuron | 2052 | 7°18'06.5" | 46°19'14.5" | -5.43 | 10:00 |
| VSVIS | Visperterminen | 1360 | 7°54'15.1" | 46°15'46.4" | -0.71 | 09:50 |
| WAE | Wädenswil | 485 | 8°40'39.8" | 47°13'14.3" | -1.55 | 10:20 |
| WFJ | Weissfluhjoch | 2691 | 9°48'23.0" | 46°49'60.0" | -1.22 | 10:00 |
| WSLALB | Alptal Bestand | 1168 | 8°42'47.6" | 47°02'55.8" | -1.33 | 10:10 |
| WSLBAB | Beatenberg Bestand | 1522 | 7°45'48.6" | 46°42'00.4" | -1.65 | 10:10 |
| WSLBAF | Beatenberg Freiland | 1560 | 7°46'18.2" | 46°42'02.1" | -1.94 | 09:50 |
| WSLBTB | Bettlachstock Bestand | 1050 | 7°24'38.1" | 47°13'20.2" | -3.10 | 10:00 |
| WSLBTF | Bettlachstock Freiland | 1100 | 7°25'02.8" | 47°13'28.2" | -4.71 | 10:00 |
| WSLCIB | Chironico Bestand | 1460 | 8°49'06.1" | 46°26'28.3" | -0.40 | 10:10 |
| WSLCIF | Chironico Freiland | 1380 | 8°48'46.9" | 46°26'47.0" | -1.81 | 09:50 |
| WSLCLB | Celerina Bestand | 1760 | 9°52'33.1" | 46°30'21.9" | -1.67 | 10:00 |
| WSLCLF | Celerina Freiland | 1865 | 9°53'18.2" | 46°29'33.1" | -3.70 | 09:50 |
| WSLISB | Isonne Bestand | 1194 | 9°00'28.8" | 46°07'30.4" | -0.57 | 10:30 |
| WSLISF | Isonne Freiland | 1149 | 9°00'25.1" | 46°07'34.4" | -1.10 | 10:30 |
| WSLJUB | Jussy Bestand | 500 | 6°17'35.3" | 46°13'52.7" | -2.33 | 10:00 |
| WSLJUF | Jussy Freiland | 497 | 6°17'12.6" | 46°13'43.1" | -4.09 | 09:50 |
| WSLLAB | Lausanne Bestand | 806 | 6°39'29.1" | 46°35'01.4" | -1.66 | 10:00 |
| WSLLAF | Lausanne Freiland | 790 | 6°38'56.4" | 46°33'33.4" | -3.44 | 09:50 |
| WSLLEB | Lens Bestand | 1069 | 7°26'09.1" | 46°16'06.9" | -0.82 | 10:10 |
| WSLNAB | Nationalpark Bestand | 1913 | 10°14'28.0" | 46°39'33.1" | -2.21 | 10:00 |
| WSLNAF | Nationalpark Freiland | 1899 | 10°13'47.8" | 46°39'44.5" | -1.55 | 10:00 |
| WSLNEB | Neunkirch Bestand | 561 | 8°32'05.1" | 47°41'02.3" | -0.96 | 10:20 |
| WSLNEF | Neunkirch Freiland | 463 | 8°31'34.8" | 47°41'23.3" | -3.57 | 10:00 |
| WSLNOB | Novaggio Bestand | 928 | 8°50'04.0" | 46°01'19.5" | -0.99 | 09:40 |
| WSLNOF | Novaggio Freiland | 1055 | 8°50'04.7" | 46°1'28.8" | -0.97 | 09:30 |
| WSLOTB | Othmarsingen Bestand | 474 | 8°13'37.3" | 47°23'55.2" | -2.79 | 10:00 |
| WSLOTF | Othmarsingen Freiland | 461 | 8°13'23.1" | 47°24'00.8" | -3.41 | 10:00 |
| WSLSCB | Schänis Bestand | 709 | 9°04'00.3" | 47°09'56.3" | -0.52 | 10:20 |
| WSLSCF | Schänis Freiland | 626 | 9°03'34.4" | 47°09'04.4" | -2.15 | 10:10 |
| WSLVOB | Vordemwald Bestand | 482 | 7°53'13.4" | 47°16'26.0" | -0.93 | 10:10 |
| WSLVOF | Vordemwald Freiland | 480 | 7°54'39.8" | 47°16'08.4" | -2.02 | 09:50 |
| WSLVSB | Visp Bestand | 698 | 7°51'26.3" | 46°17'48.9" | -2.46 | 10:00 |
| WSLVSF | Visp Freiland | 640 | 7°50'33.4" | 46°18'09.7" | -1.43 | 09:50 |
| WYN | Wynau | 422 | 7°47'14.7" | 47°15'18.1" | -1.07 | 09:50 |
| ZER | Zermatt | 1638 | 7°45'11.2" | 46°01'44.9" | -2.55 | 09:10 |

Table S3. MeteoSwiss standard weather stations measured wind speed and wind direction and their classification according to topography. Where possible, the orientation of the valley and the slope angle are given.

| Code | Location | Longitude | Latitude | Elevation (m) | Classification | Up-Valley Dir. | Slope Angle |
|------|--------------------------|---------------|---------------|---------------|----------------|----------------|-------------|
| ABO | Adelboden | 7°33'37.5" E | 46°29'32.1" N | 1326 | valley | 225° | 310° |
| AEG | Oberägeri | 8°36'29.1" E | 47°08'00.9" N | 724 | flat | 315° | 45° |
| AIG | Aigle | 6°55'27.9" E | 46°19'35.9" N | 381 | valley | 315° | |
| ALP | Alpnach | 8°17'08.6" E | 46°56'34.8" N | 436 | valley | 200° | |
| ALT | Altdorf | 8°37'18.5" E | 46°53'13.3" N | 438 | valley | 150° | |
| AND | Andeer | 9°25'54.9" E | 46°36'36.4" N | 987 | valley | 200° | 110° |
| ANT | Andermatt | 8°34'50.0" E | 46°37'51.3" N | 1438 | valley | 225° | |
| ARD | Arosa | 9°40'28.3" E | 46°46'45.0" N | 1840 | slope | 255° | 310° |
| ARH | Altenrhein | 9°34'00.5" E | 47°29'01.2" N | 398 | flat | 120° | 190° |
| ATT | Les Attelas | 7°16'07.5" E | 46°05'56.8" N | 2730 | mtohill | 160° | |
| BAN | Bantiger | 7°31'43.2" E | 46°58'40.1" N | 941 | mtohill | 135° | |
| BAS | Basel / Binningen | 7°35'00.8" E | 47°32'27.7" N | 316 | slope | 110° | 190° |
| BEH | Passo del Bernina | 10°01'10.5" E | 46°24'33.0" N | 2260 | slope | 135° | 45° |
| BER | Bern / Zollikofen | 7°27'50.4" E | 46°59'26.7" N | 552 | flat | 0° | |
| BEZ | Bezau | 8°13'59.8" E | 47°33'26.0" N | 325 | valley | 255° | |
| BHF | Oberrüti / Büelhof | 7°16'58.7" E | 46°57'07.6" N | 775 | mtohill | 310° | |
| BIE | Bière | 6°20'32.6" E | 46°31'29.5" N | 683 | flat | 225° | 315° |
| BIN | Binn | 8°11'27.3" E | 46°21'55.7" N | 1448 | valley | 75° | 170° |
| BIZ | Bischofszell | 9°14'05.0" E | 47°29'50.6" N | 470 | flat | 60° | |
| BLA | Blatten, Lötschental | 7°49'23.5" E | 46°25'13.6" N | 1538 | valley | 50° | 100° |
| BOL | Boltigen | 7°23'03.1" E | 46°37'24.7" N | 820 | valley | 200° | |
| BOU | Bouveret | 6°51'25.2" E | 46°23'36.4" N | 374 | flat | 135° | |
| BRL | La Brévine | 6°36'37.0" E | 46°59'01.8" N | 1050 | valley | 270° | |
| BRZ | Brienz | 8°03'39.1" E | 46°44'26.6" N | 567 | valley | 85° | |
| BUF | Buffalora | 10°16'01.9" E | 46°38'53.3" N | 1968 | slope | 170° | 45° |
| BUS | Buchs / Aarau | 8°04'46.0" E | 47°23'03.6" N | 386 | flat | 170° | |
| CDF | La Chaux-de-Fonds | 6°47'32.3" E | 47°04'58.6" N | 1018 | valley | 45° | 315° |
| CEV | Cevio | 8°36'11.4" E | 46°19'13.8" N | 417 | valley | 0° | |
| CGI | Nyon / Changins | 6°13'39.9" E | 46°24'03.7" N | 455 | mtohill | 30° | |
| CHA | Chasseral | 7°03'15.8" E | 47°07'54.4" N | 1599 | mtohill | 240° | |
| CHB | Les Charbonnières | 6°18'44.7" E | 46°40'12.5" N | 1045 | slope | 225° | 315° |
| CHD | Château-d'Oex | 7°08'22.7" E | 46°28'47.3" N | 1029 | slope | 100° | 0° |
| CHM | Chaumont | 6°58'43.7" E | 47°02'57.0" N | 1136 | mtohill | 200° | |
| CHU | Chur | 9°31'50.1" E | 46°52'13.5" N | 556 | valley | 200° | |
| CHZ | Cham | 8°27'52.7" E | 47°11'17.8" N | 442 | mtohill | 170° | |
| CIM | Cimetta | 8°47'29.9" E | 46°12'01.5" N | 1661 | mtohill | 345° | |
| CMA | Crap Masegn | 9°10'48.0" E | 46°50'32.3" N | 2480 | mtohill | 320° | |
| COM | Acquarossa / Comprovasco | 8°56'08.4" E | 46°27'33.9" N | 575 | valley | 350° | 270° |
| COV | Piz Corvatsch | 9°49'16.5" E | 46°25'04.8" N | 3302 | mtohill | 45° | |
| COY | Courtelary | 7°05'26.3" E | 47°10'50.9" N | 695 | slope | 250° | 170° |
| CRM | Cressier | 7°03'32.8" E | 47°02'51.4" N | 431 | flat | 250° | |
| DAV | Davos | 9°50'36.6" E | 46°48'46.6" N | 1594 | slope | 220° | 310° |
| DEM | Delémont | 7°20'58.4" E | 47°21'06.1" N | 439 | slope | | 160° |
| DIA | Les Diablerets | 7°12'13.6" E | 46°19'36.3" N | 2964 | mtohill | 325° | |
| DIS | Disentis / Sedrun | 8°51'12.4" E | 46°42'23.5" N | 1197 | slope | 225° | 315° |
| DOL | La Dôle | 6°05'58.1" E | 46°25'28.9" N | 1669 | mtohill | 225° | |
| EBK | Ebnat-Kappel | 9°06'30.5" E | 47°16'24.2" N | 623 | valley | 140° | |
| EGH | Eggishorn | 8°05'33.8" E | 46°25'35.5" N | 2893 | mtohill | 20° | |
| EGO | Egolzwil | 8°00'17.1" E | 47°10'45.9" N | 521 | mtohill | 20° | |
| EIN | Einsiedeln | 8°45'23.6" E | 47°07'58.9" N | 910 | slope | 170° | 313° |
| ELM | Elm | 9°10'31.3" E | 46°55'25.5" N | 958 | slope | 190° | 120° |
| EMM | Emmen | 8°17'45.5" E | 47°05'03.5" N | 426 | flat | 225° | |
| ENG | Engelberg | 8°24'37.6" E | 46°49'18.8" N | 1035 | slope | 30° | 120° |
| EVI | Evionnaz | 7°01'36.3" E | 46°10'58.6" N | 482 | slope | 280 | 0° |
| EVO | Evolène / Villa | 7°30'31.2" E | 46°06'43.7" N | 1825 | slope | 40° | 130° |

Table S3. (continued)

| Code | Location | Longitude | Latitude | Elevation (m) | Classification | Valley Dir. | Slope Angle |
|------|-------------------------|---------------|---------------|---------------|----------------|-------------|-------------|
| FAH | Fahy | 6°56'27.9" E | 47°25'25.7" N | 596 | mtohill | 260° | 170° |
| FRE | Bullet / La Frétaz | 6°34'34.7" E | 46°50'26.2" N | 1205 | mtohill | 225° | 315° |
| GEN | Monte Generoso | 9°01'04.3" E | 45°55'39.3" N | 1600 | mtohill | 45° | |
| GES | Gersau | 8°31'24.4" E | 46°59'45.8" N | 519 | slope | 60° | 330° |
| GIH | Giswil | 8°11'24.7" E | 46°50'58.2" N | 471 | flat | 200° | |
| GLA | Glarus | 9°04'00.9" E | 47°02'04.5" N | 516 | slope | 135° | 200° |
| GOE | Gösgen | 7°58'25.2" E | 47°21'46.9" N | 380 | flat | 290° | |
| GOR | Gornergrat | 7°47'08.7" E | 45°59'01.1" N | 3129 | mtohill | 270° | |
| GRA | Fribourg / Posieux | 7°06'49.3" E | 46°46'17.0" N | 646 | slope | 225° | 315° |
| GRE | Grenchen | 7°24'54.4" E | 47°10'44.7" N | 430 | flat | 245° | |
| GRH | Grimsel Hospiz | 8°19'59.7" E | 46°34'18.1" N | 1980 | mtohill | 225° | |
| GRO | Grono | 9°09'49.5" E | 46°15'18.3" N | 323 | valley | 30° | |
| GSB | Col du Grand St-Bernard | 7°10'14.9" E | 45°52'07.6" N | 2472 | valley | 270° | 0° |
| GUB | Regensdorf / Gubrist | 8°28'44.1" E | 47°29'59.5" N | 410 | mtohill | 270° | |
| GUE | Gütsch ob Andermatt | 8°36'54.2" E | 46°39'08.8" N | 2283 | mtohill | 250° | 0° |
| GUT | Güttingen | 9°16'45.8" E | 47°36'06.1" N | 440 | slope | 11°0 | 200° |
| GVE | Genève-Cointrin | 6°07'39.9" E | 46°14'51.0" N | 412 | flat | 45° | |
| HAI | Salen-Reutenen | 9°01'26.1" E | 47°39'04.4" N | 718 | flat | 270° | |
| HLL | Hallau | 8°28'13.7" E | 47°41'50.2" N | 419 | valley | 40° | 310° |
| HOE | Hörnli | 8°56'29.9" E | 47°22'15.1" N | 1144 | mtohill | 350° | |
| INT | Interlaken | 7°52'12.5" E | 46°40'20.1" N | 577 | valley | 180° | |
| JUN | Jungfrauoch | 7°59'07.2" E | 46°32'50.8" N | 3580 | mtohill | 40° | |
| KLO | Zürich / Kloten | 8°32'09.9" E | 47°28'46.6" N | 426 | flat | 135° | |
| KOP | Koppigen | 7°36'19.7" E | 47°07'07.9" N | 484 | flat | 135° | |
| LAE | Lägern | 8°23'50.0" E | 47°28'55.0" N | 845 | mtohill | 270° | |
| LAG | Langnau i.E. | 7°48'23.2" E | 46°56'22.7" N | 745 | slope | 110° | 20° |
| LCK | Lucketen | 7°31'43.2" E | 46°58'40.1" N | 941 | slope | | 330° |
| LEI | Leibstadt | 8°11'17.7" E | 47°35'50.2" N | 341 | flat | 250° | |
| LUG | Lugano | 8°57'37.1" E | 46°00'15.2" N | 273 | flat | 30° | |
| LUZ | Luzern | 8°18'03.5" E | 47°02'11.2" N | 454 | flat | 180° | |
| MAG | Magadino / Cadenazzo | 8°56'01.2" E | 46°09'36.1" N | 203 | flat | 80° | |
| MAH | Mathod | 6°34'04.7" E | 46°44'13.1" N | 437 | flat | 225° | |
| MAS | Marsens | 7°04'10.8" E | 46°39'23.3" N | 714 | flat | 200° | 290° |
| MER | Meiringen | 8°10'09.3" E | 46°43'56.0" N | 588 | flat | 135° | |
| MLS | Le Moléson | 7°01'04.1" E | 46°32'46.2" N | 1974 | mtohill | 0° | |
| MOA | Mosen | 8°13'58.1" E | 47°14'37.8" N | 453 | flat | 135° | |
| MOE | Möhlin | 7°52'40.5" E | 47°34'19.9" N | 344 | flat | 110° | |
| MRP | Monte Rosa-Plattje | 7°48'52.5" E | 45°57'23.9" N | 2885 | slope | | 135° |
| MSK | Mühleberg / Stockeren | 8°38'57.1" E | 47°28'01.9" N | 592 | mtohill | 270° | |
| MTR | Matro | 8°55'29.1" E | 46°24'36.4" N | 2171 | mtohill | 310° | |
| MUB | Mühleberg | 7°16'41.3" E | 46°58'23.7" N | 479 | valley | 90° | 180° |
| MVE | Montana | 7°27'38.8" E | 46°17'55.5" N | 1427 | slope | | 80° |
| NAP | Napf | 7°56'24.2" E | 47°00'16.8" N | 1403 | mtohill | 270° | |
| NAS | Naluns / Schlivera | 10°15'41.0" E | 46°49'01.8" N | 2400 | mtohill | 315° | |
| NEE | Neerach | 8°38'57.1" E | 47°28'01.9" N | 592 | flat | 200° | 290° |
| NEU | Neuchâtel | 6°57'14.8" E | 47°00'01.6" N | 485 | mtohill | 45° | |
| ORO | Oron | 6°51'29.6" E | 46°34'20.1" N | 827 | flat | 225° | |
| OTL | Locarno / Monti | 8°47'14.7" E | 46°10'21.2" N | 366 | slope | | 320° |
| PAY | Payerne | 6°56'32.7" E | 46°48'41.7" N | 490 | slope | 220° | 310° |
| PIL | Pilatus | 8°15'08.4" E | 46°58'43.9" N | 2106 | mtohill | 225° | |
| PIO | Piotta | 8°41'17.3" E | 46°30'53.2" N | 990 | valley | 270° | 0° |
| PLF | Plaffeien | 7°15'57.6" E | 46°44'51.6" N | 1042 | mtohill | 225° | |
| PMA | Piz Martegnas | 9°31'46.4" E | 46°34'37.9" N | 2670 | mtohill | 225° | |
| PRE | St-Prex | 6°26'34.8" E | 46°29'01.2" N | 425 | mtohill | 180° | |
| PSI | PSI Würenlingen | 7°16'58.7" E | 46°57'07.6" N | 775 | valley | 225° | 135° |
| PUY | Pully | 6°40'02.7" E | 46°30'44.3" N | 455 | slope | 130° | 40° |
| QUI | Quinten | 9°12'57.8" E | 47°07'43.5" N | 419 | flat | 260° | 350° |
| RAG | Bad Ragaz | 9°30'09.3" E | 47°00'59.8" N | 496 | valley | 150° | |

Table S3. (continued)

| Code | Location | Longitude | Latitude | Elevation (m) | Classification | Valley Dir. | Slope Angle |
|--------|-------------------------|----------------|----------------|---------------|----------------|-------------|-------------|
| REH | Zürich / Affoltern | 8°31'04.4'' E | 47°25'39.6'' N | 443 | flat | 90° | |
| ROB | Poschiavo / Robbia | 10°03'40.2'' E | 46°20'47.9'' N | 1078 | slope | 200° | |
| ROE | Robièi | 8°30'48.2'' E | 46°26'35.0'' N | 1896 | slope | | 315° |
| RUE | Rünenberg | 7°52'45.6'' E | 47°26'04.4'' N | 611 | mtohill | 270° | |
| SAE | Säntis | 9°20'37.1'' E | 47°14'58.0'' N | 2502 | mtohill | 330° | |
| SAG | Sattel-Aegeri | 8°38'13.1'' E | 47°04'51.8'' N | 790 | valley | 45° | |
| SAM | Samedan | 9°52'44.3'' E | 46°31'35.0'' N | 1708 | flat | 220° | |
| SBE | S. Bernardino | 9°11'04.8'' E | 46°27'48.8'' N | 1638 | slope | 270° | 0° |
| SBO | Stabio | 8°55'56.5'' E | 45°50'36.2'' N | 353 | valley | 250° | |
| SCM | Schmerikon | 8°56'24.9'' E | 47°13'28.6'' N | 408 | flat | 90° | 0° |
| SCU | Scuol | 10°16'59.6'' E | 46°47'35.8'' N | 1303 | slope | 330° | 240° |
| SHA | Schaffhausen | 8°37'12.3'' E | 47°41'23.2'' N | 438 | valley | 170° | 280° |
| SIA | Segl-Maria | 9°45'44.3'' E | 46°25'56.4'' N | 1804 | flat | 240° | |
| SIO | Sion | 7°19'48.6'' E | 46°13'06.9'' N | 482 | flat | 250° | |
| SIR | Sion | 7°20'19.9'' E | 46°13'18.7'' N | 483 | flat | 250° | |
| SLB | Stadlerberg | 8°33'24.7'' E | 47°28'59.5'' N | 496 | mtohill | 170° | 260° |
| SMA | Zürich / Fluntern | 8°33'56.7'' E | 47°22'40.4'' N | 555 | slope | 135° | 45° |
| SMM | Sta. Maria, Val Müstair | 10°25'34.7'' E | 46°36'08.1'' N | 1383 | slope | 225° | 135° |
| SPF | Schüpfheim | 8°00'44.8'' E | 46°56'49.3'' N | 742 | slope | 200° | 110° |
| SRS | Schiers | 9°40'05.0'' E | 46°58'31.8'' N | 626 | valley | 110° | 20° |
| STC | St. Chrischona | 8°28'44.1'' E | 47°29'59.5'' N | 410 | slope | 270° | 180° |
| STG | St. Gallen | 9°23'54.5'' E | 47°25'31.6'' N | 775 | slope | | 135° |
| STK | Steckborn | 8°58'53.2'' E | 47°40'07.1'' N | 398 | flat | 45° | 135° |
| TAE | Aadorf / Tänikon | 8°54'17.6'' E | 47°28'47.5'' N | 539 | valley | 115° | |
| THU | Thun | 7°35'06.8'' E | 46°44'59.5'' N | 570 | flat | 150° | |
| TIT | Titlis | 8°25'32.9'' E | 46°46'13.8'' N | 3040 | mtohill | 270° | 135° |
| TSG | Arosa / Tschuggen | 9°39'58.8'' E | 46°46'51.4'' N | 1840 | mtohill | 270° | 0° |
| UEB | Uetliberg | 8°33'24.7'' E | 47°28'59.5'' N | 496 | mtohill | 0° | |
| ULR | Ulrichen | 8°18'29.3'' E | 46°30'17.4'' N | 1345 | valley | 40° | 130° |
| VAB | Valbella | 9°33'15.9'' E | 46°45'18.1'' N | 1569 | slope | | 225° |
| VAD | Vaduz | 9°31'03.0'' E | 47°07'38.8'' N | 457 | flat | 80° | |
| VIO | Vicosoprano | 9°37'40.1'' E | 46°21'10.9'' N | 1089 | valley | 250° | |
| VIS | Visp | 7°50'34.6'' E | 46°18'10.3'' N | 639 | flat | 100° | |
| VIT | Villars-Tiercelin | 6°42'36.3'' E | 46°37'18.4'' N | 859 | slope | 210° | 300° |
| WAE | Wädenswil | 8°40'39.8'' E | 47°13'14.3'' N | 485 | slope | 120° | 210° |
| WFJ | Weissfluhjoch | 9°48'23.0'' E | 46°49'60.0'' N | 2691 | mtohill | 230° | |
| WSLBAF | Beatenberg Freiland | 7°46'18.2'' E | 46°42'02.1'' N | 1560 | slope | | 0° |
| WSLBTF | Bettlachstock Freiland | 7°25'02.8'' E | 47°13'28.2'' N | 1100 | slope | 225° | 315° |
| WSLCIF | Chironico Freiland | 8°48'46.9'' E | 46°26'47.0'' N | 1380 | slope | 270° | 180° |
| WSLCLF | Celerina Freiland | 9°53'18.2'' E | 46°29'33.1'' N | 1865 | slope | 135° | 225° |
| WSLISF | Isonne Freiland | 9°00'25.1'' E | 46°07'34.4'' N | 1149 | slope | 120° | 210° |
| WSLJUF | Jussy Freiland | 6°17'12.6'' E | 46°13'43.1'' N | 497 | slope | 225° | 135° |
| WSLLAF | Lausanne Freiland | 6°38'56.4'' E | 46°33'33.4'' N | 790 | mtohill | 40° | |
| WSLNAF | Nationalpark Freiland | 10°13'47.8'' E | 46°39'44.5'' N | 1899 | slope | 110° | 315° |
| WSLNEF | Neunkrich Freiland | 8°31'34.8'' E | 47°41'23.3'' N | 463 | mtohill | 60° | |
| WSLNOF | Novaggio Freiland | 8°50'04.7'' E | 46°01'28.8'' N | 1055 | slope | | 330° |
| WSLOTF | Othmarsingen Freiland | 8°13'23.1'' E | 47°24'00.8'' N | 461 | mtohill | | 90° |
| WSLSCF | Schänis Freiland | 9°03'34.4'' E | 47°09'04.4'' N | 626 | slope | | 45° |
| WSLVOF | Vordemwald Freiland | 7°54'39.8'' E | 47°16'08.4'' N | 480 | slope | | 250° |
| WSLVSF | Visp Freiland | 7°50'33.4'' E | 46°18'09.7'' N | 640 | flat | 100° | |
| WYN | Wynau | 7°47'14.6'' E | 47°15'18.1'' N | 422 | valley | 225° | 135° |
| ZER | Zermatt | 7°45'11.2'' E | 46°01'44.9'' N | 1638 | slope | 225° | 315° |

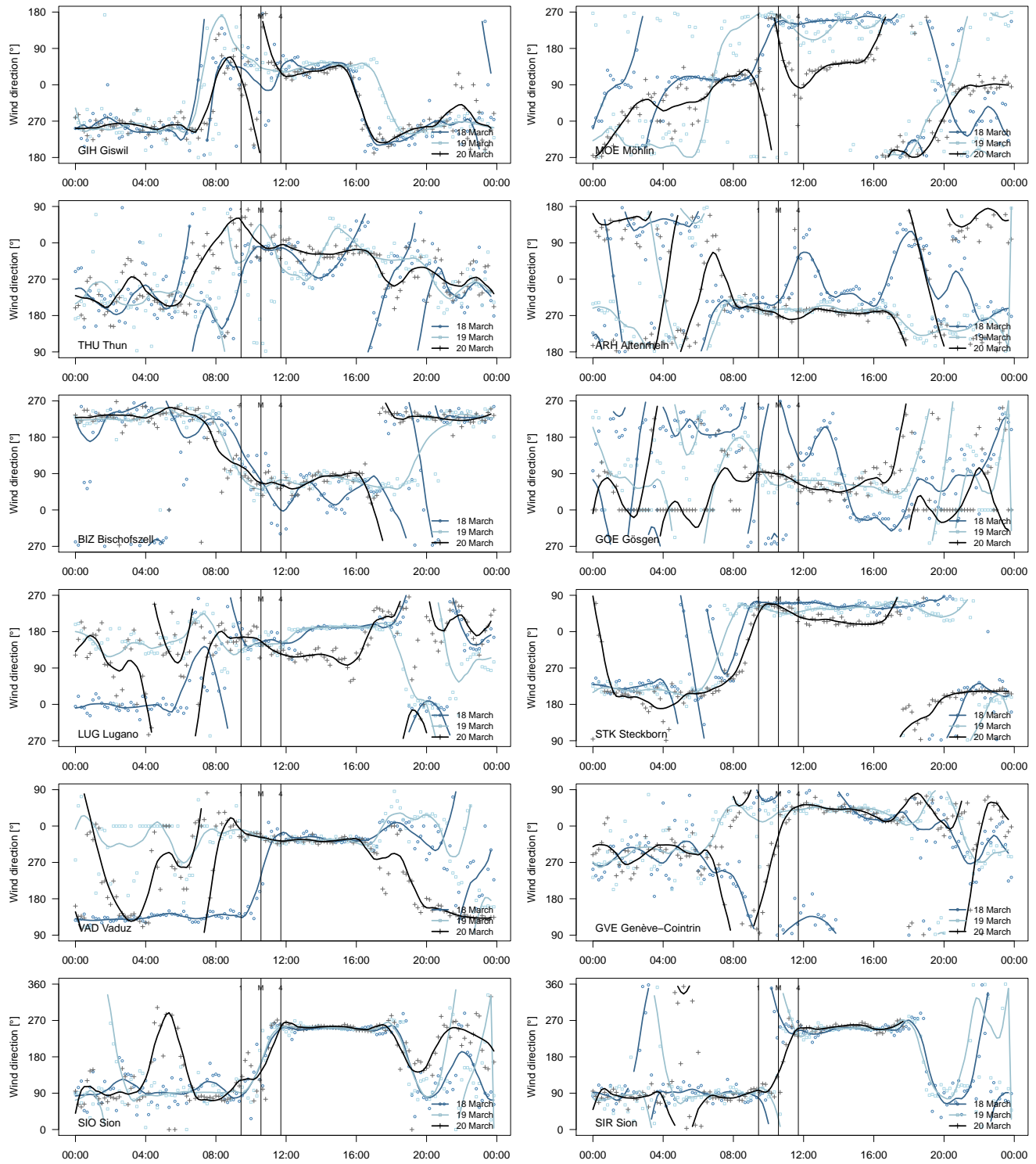


Figure S1. Wind direction evolution at MeteoSwiss sites classified as ‘flat’. Black line and gray symbols: day of eclipse (20 March 2015). Light blue line and symbols (19 March 2015) and dark blue line and symbols (18 March 2015): conditions on the days before for comparison. The timing of the first (1) and last (4) contact and the eclipse maximum (M) are shown with vertical lines. Site names and codes correspond to those given in Table S3. The bold lines are local polynomial regression (loess) fits. Note that the y-axis was shifted by 0, 90, 180 or 270° depending on site.

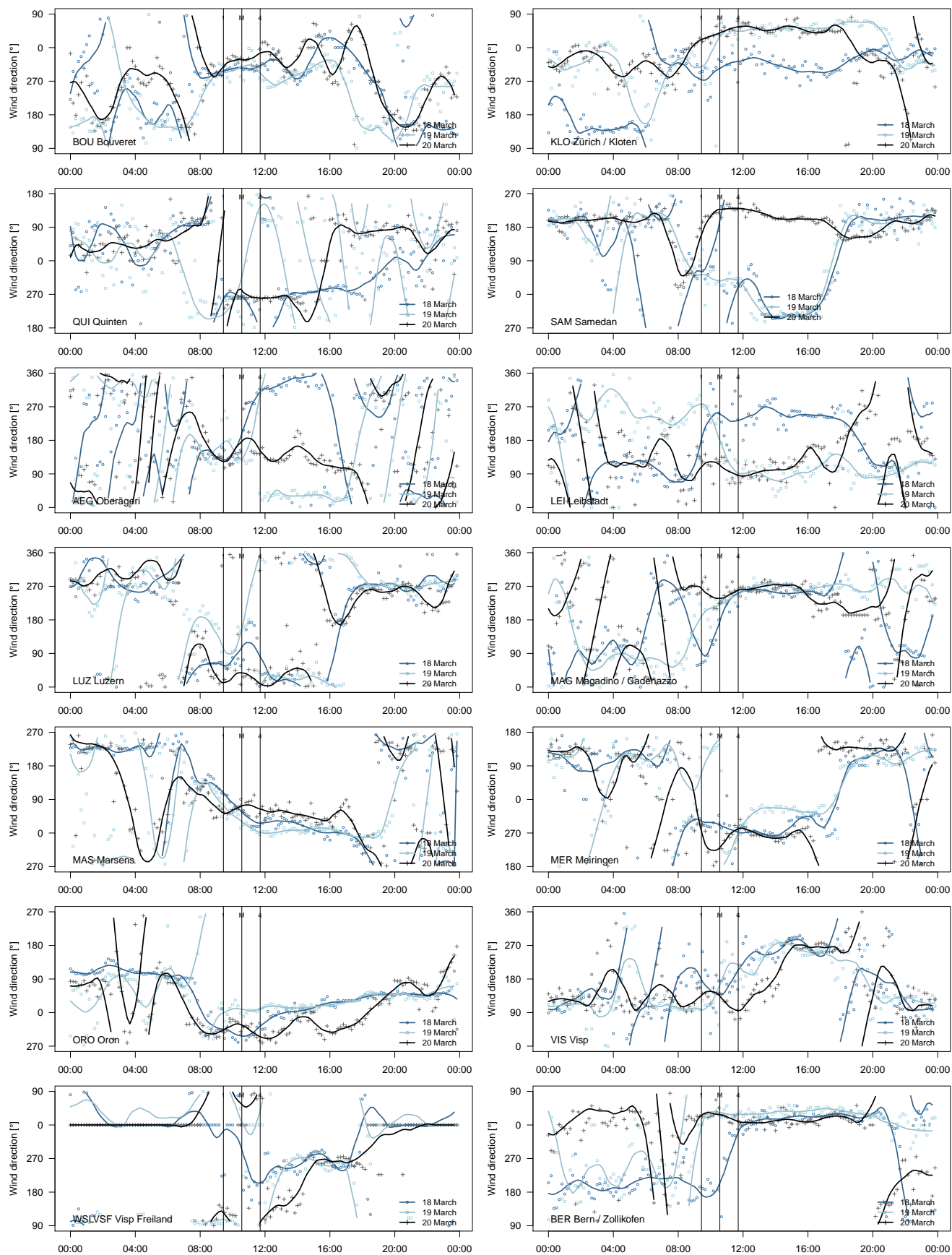


Figure S1. (continued)

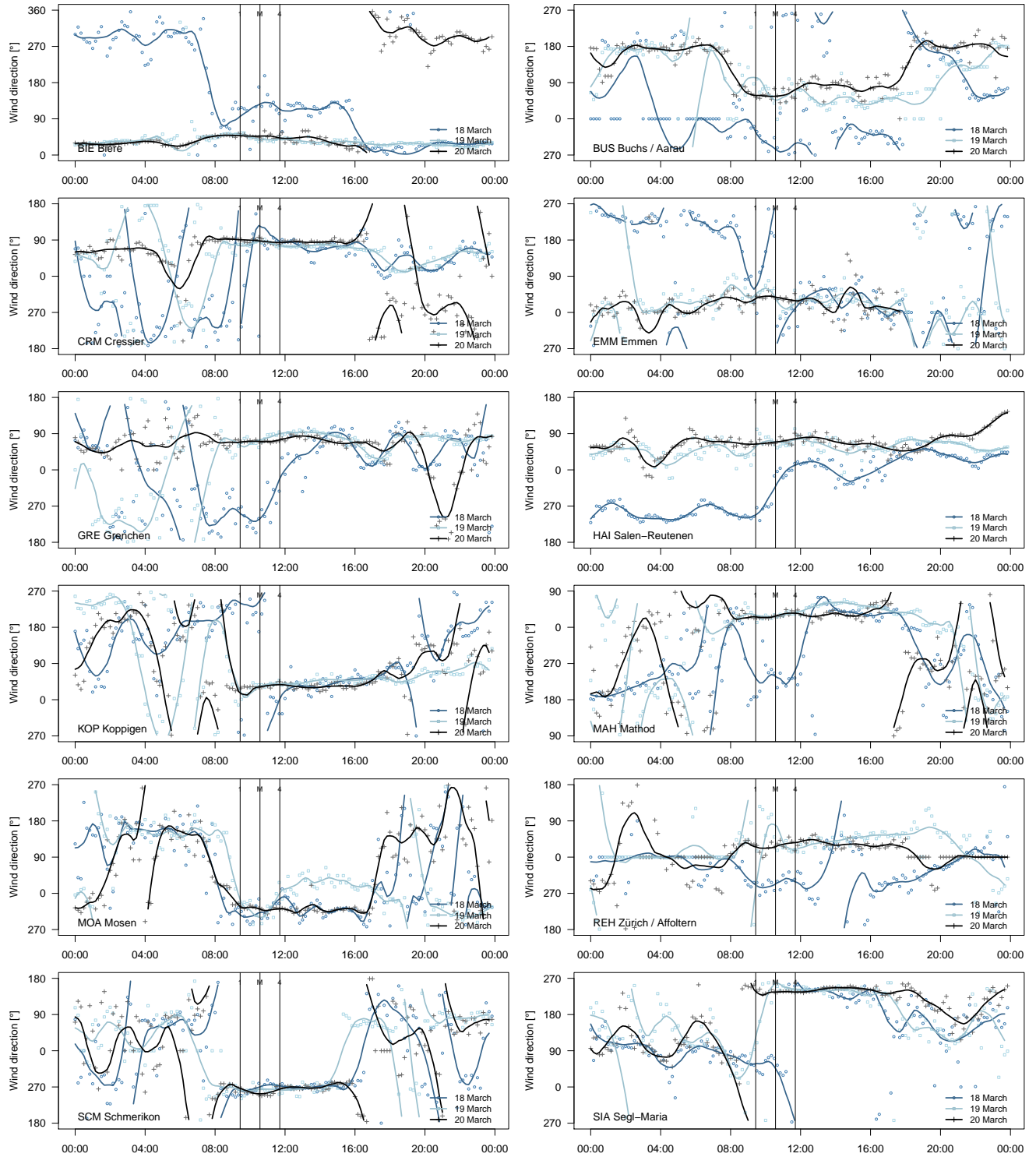


Figure S1. (continued)

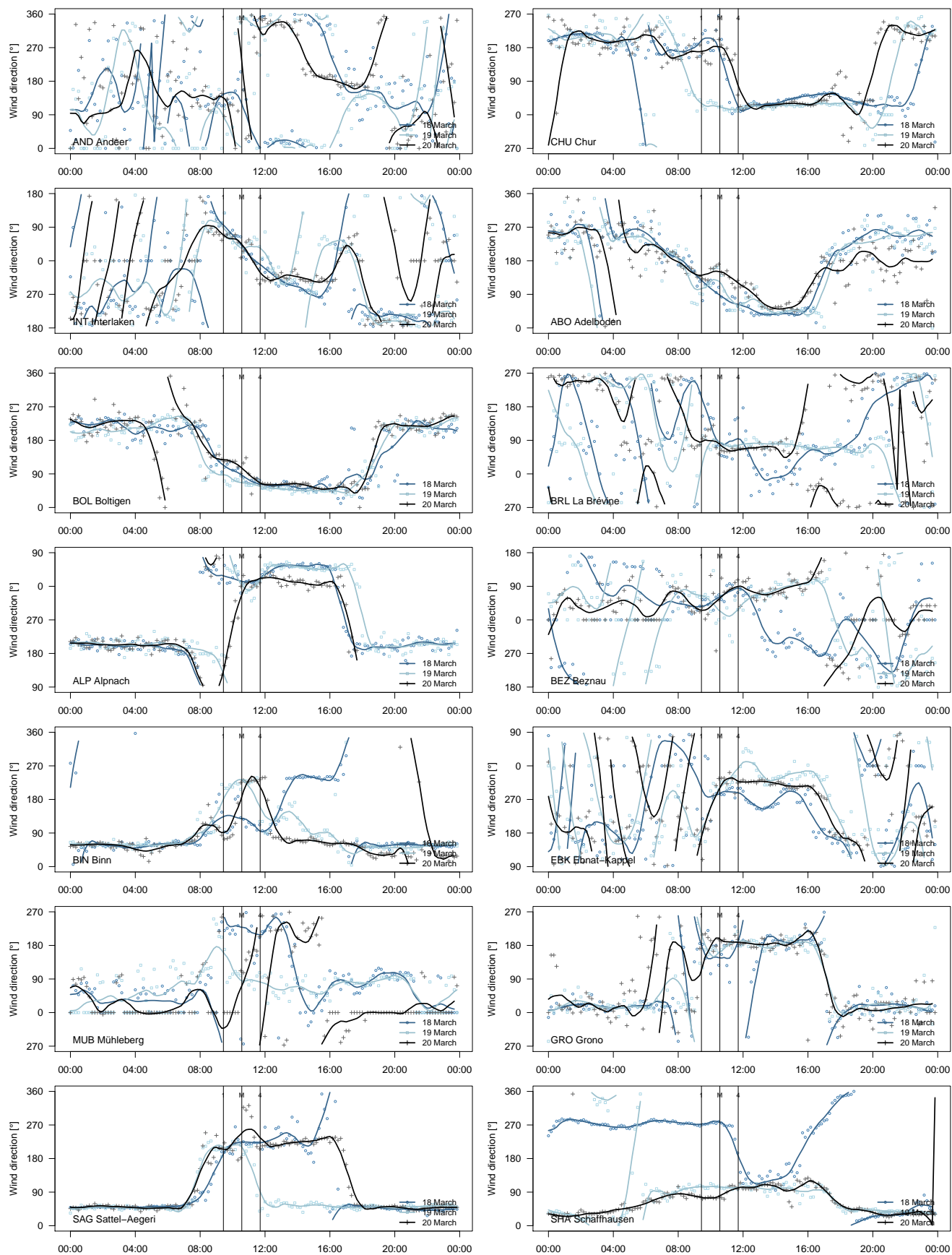


Figure S2. As Figure S1, but for sites classified as ‘valley’ sites in rather small valleys (otherwise a site was classified as ‘flat’).

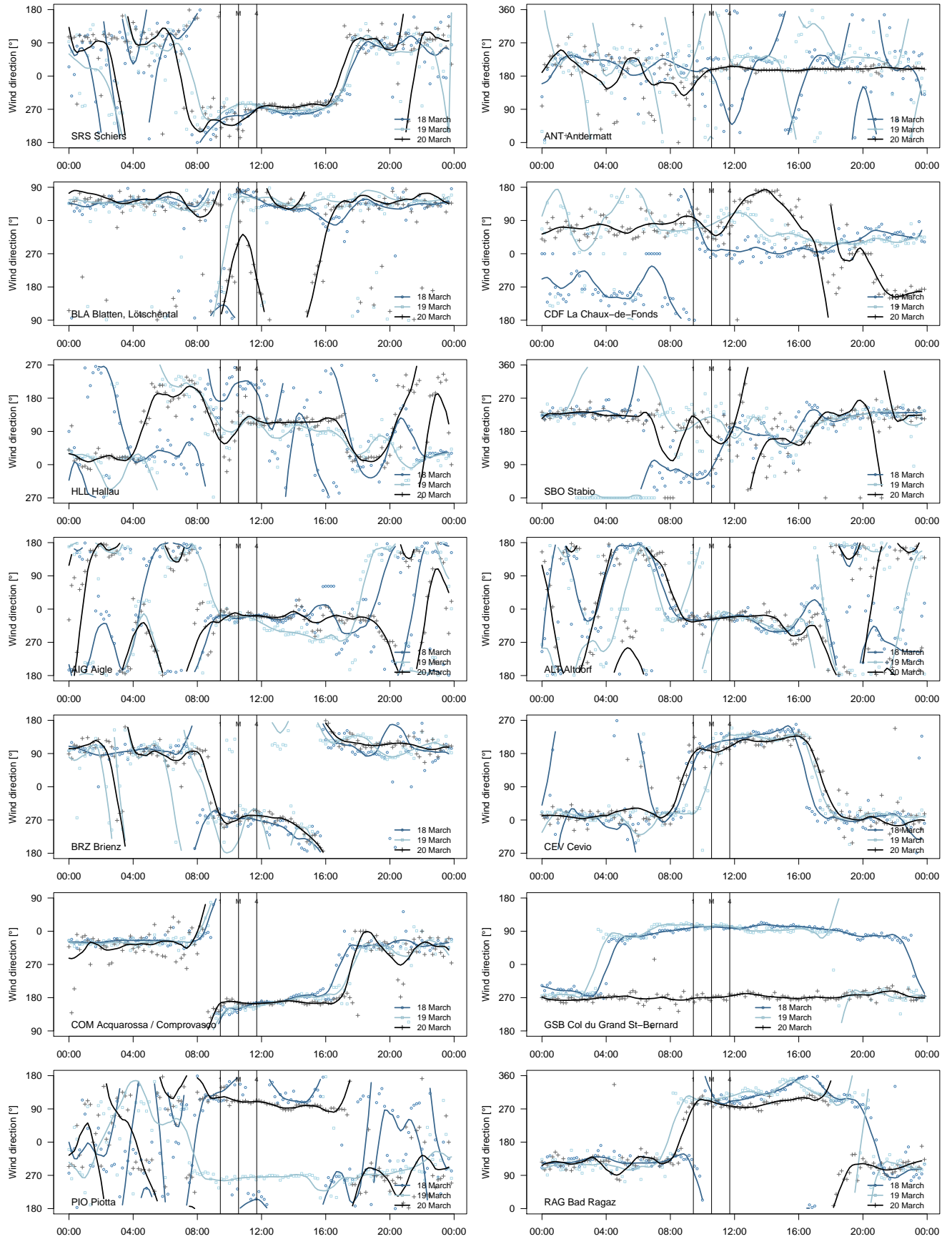


Figure S2. (continued)

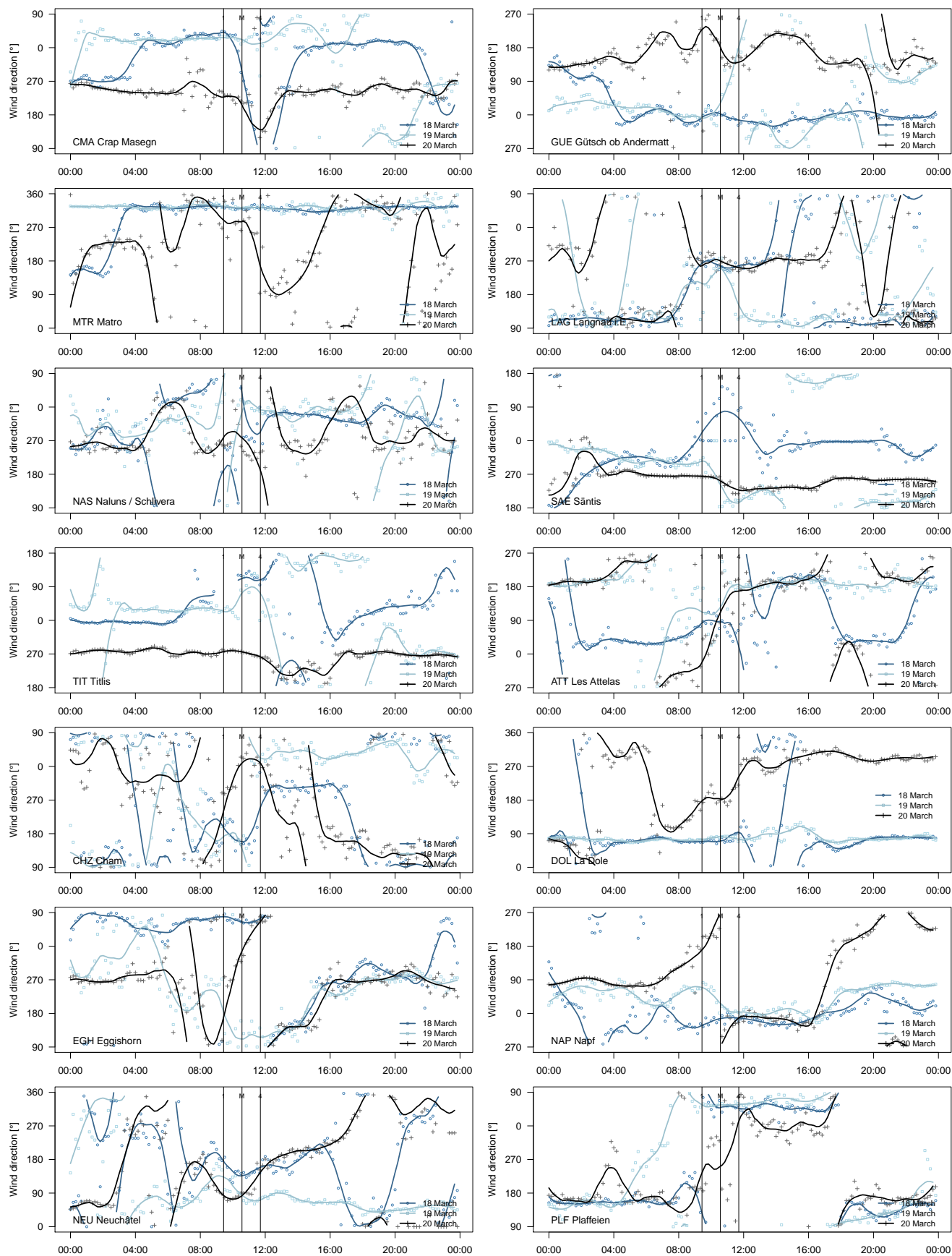


Figure S3. As Figure S1, but for sites classified as 'mountain or hilltop' sites.

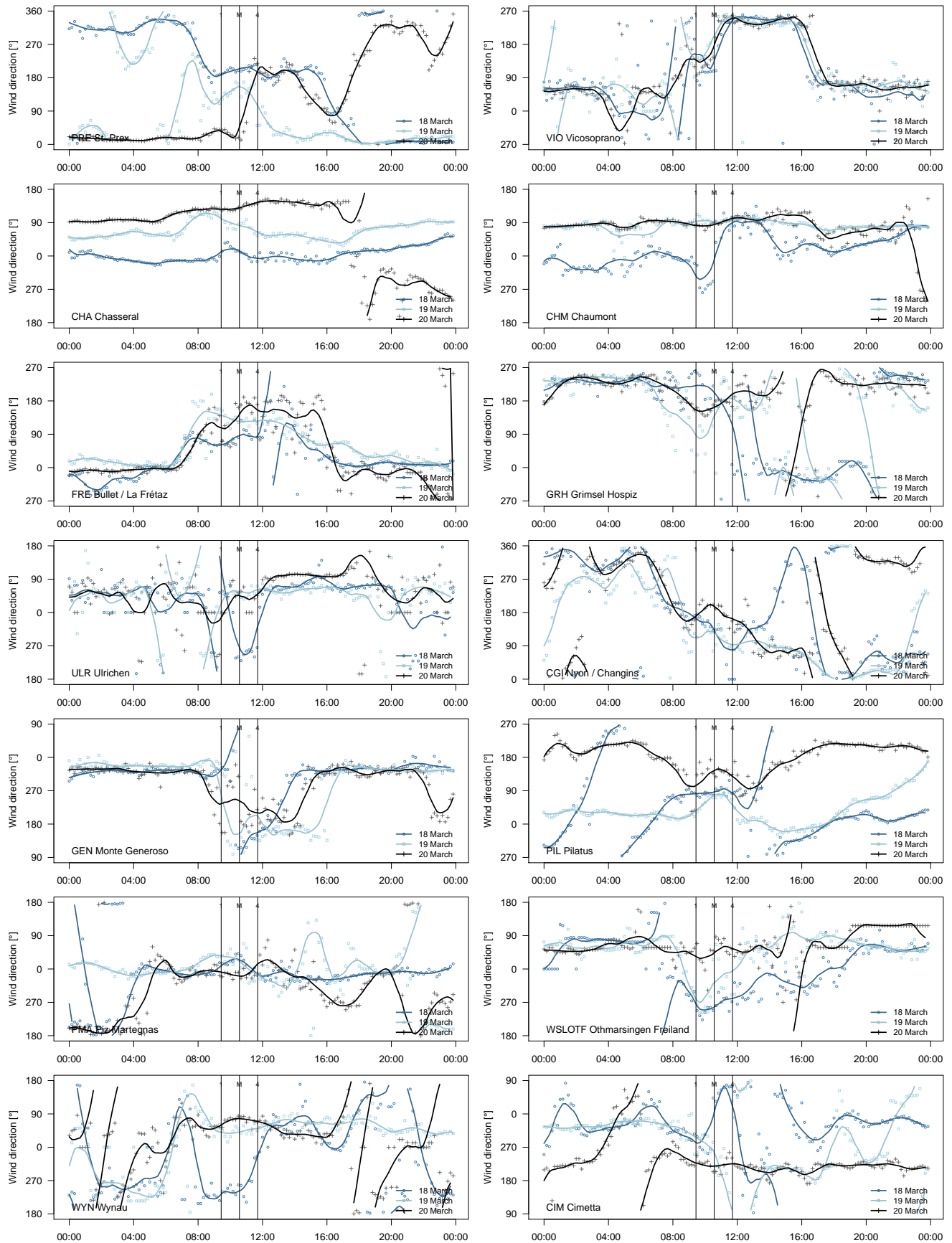


Figure S3. (continued)

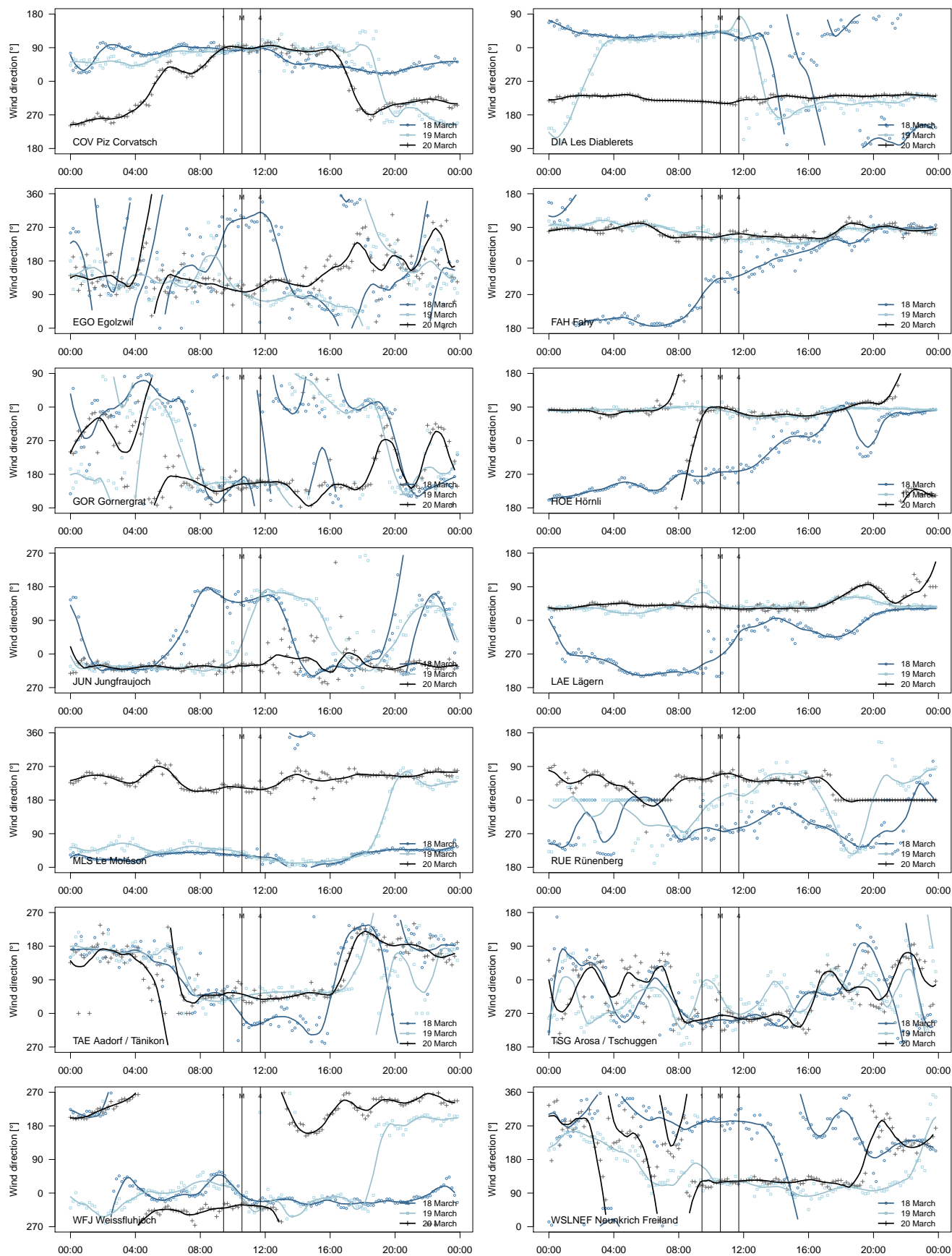


Figure S3. (continued)

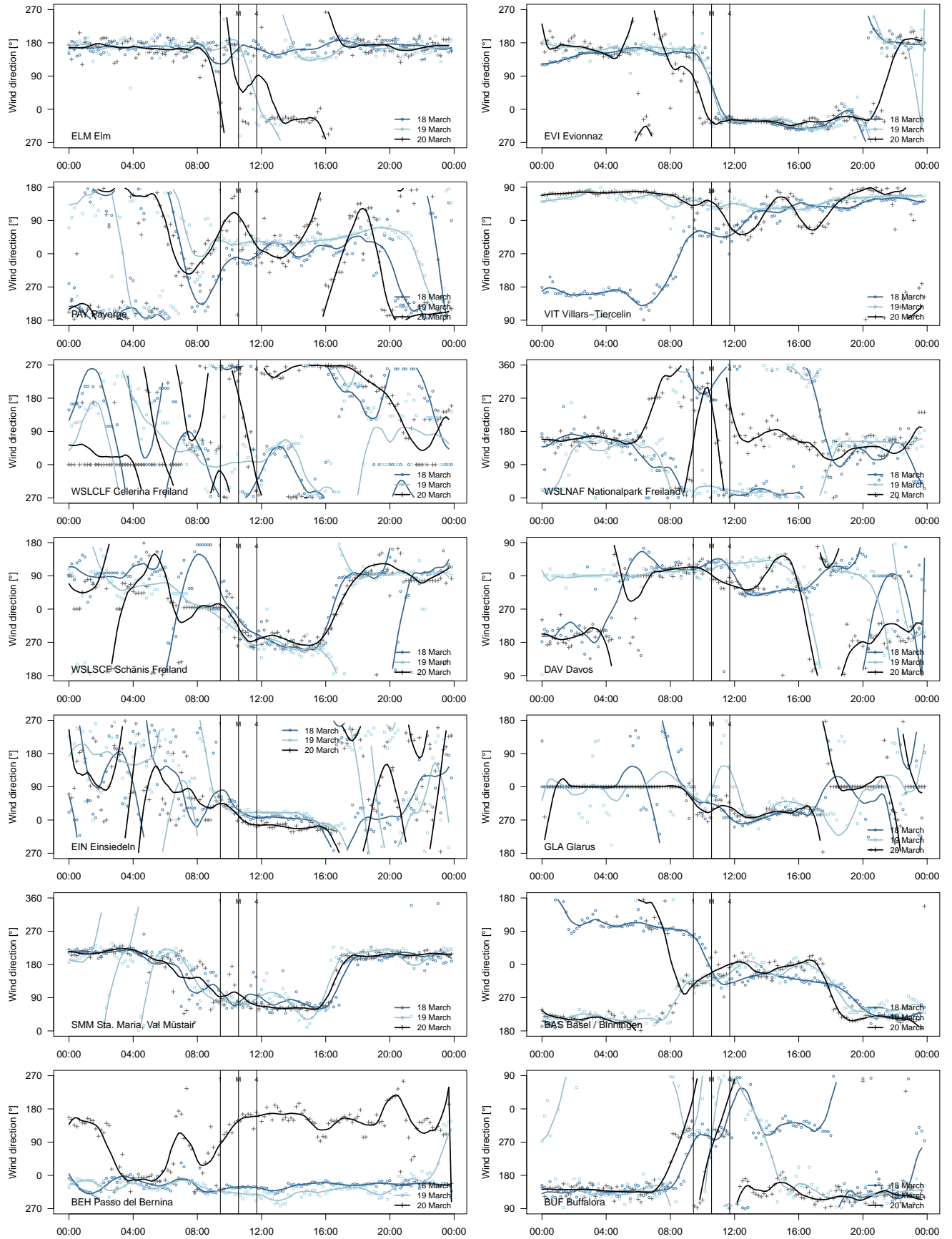


Figure S4. As Figure S1, but for sites classified as 'slope' sites.

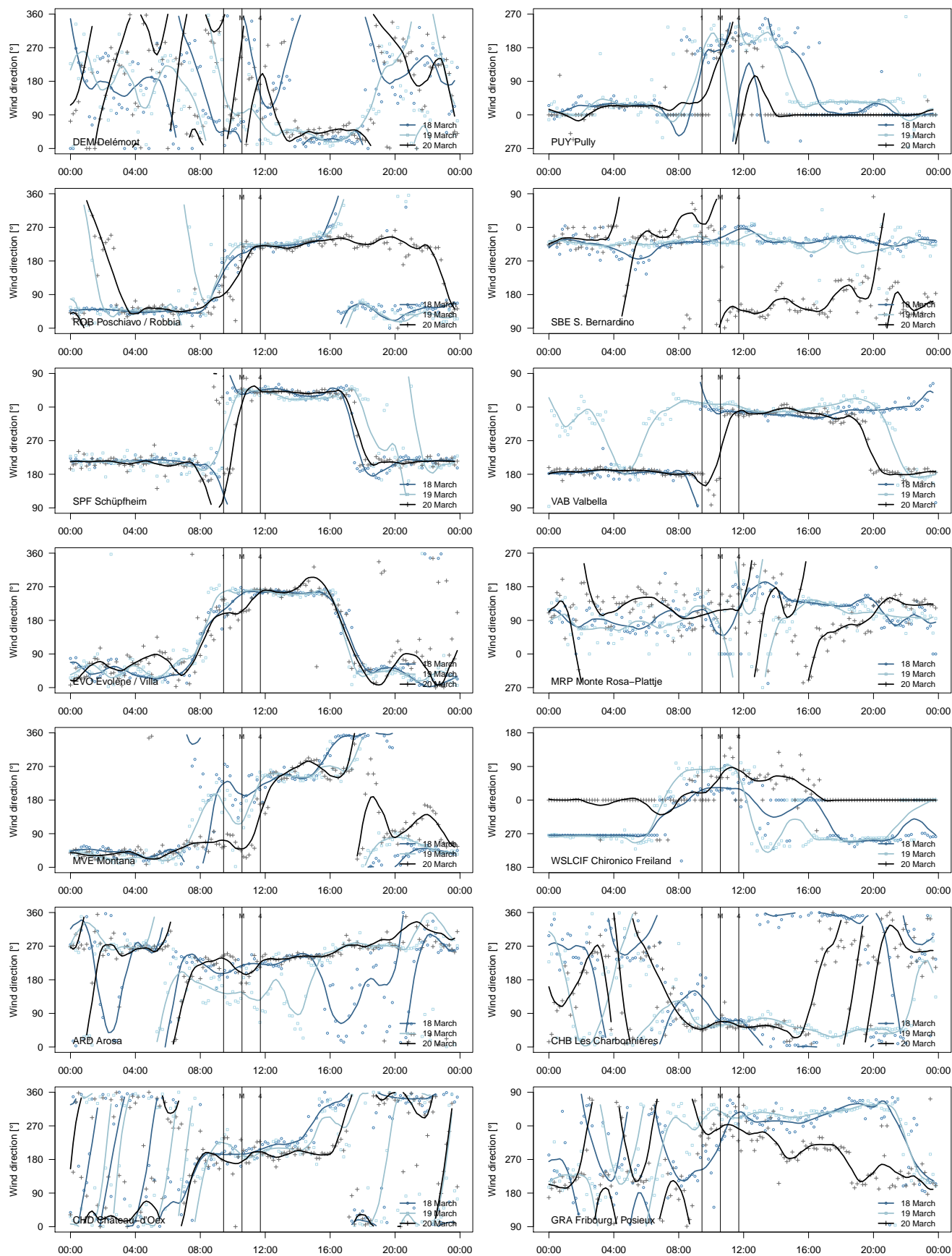


Figure S4. (continued)

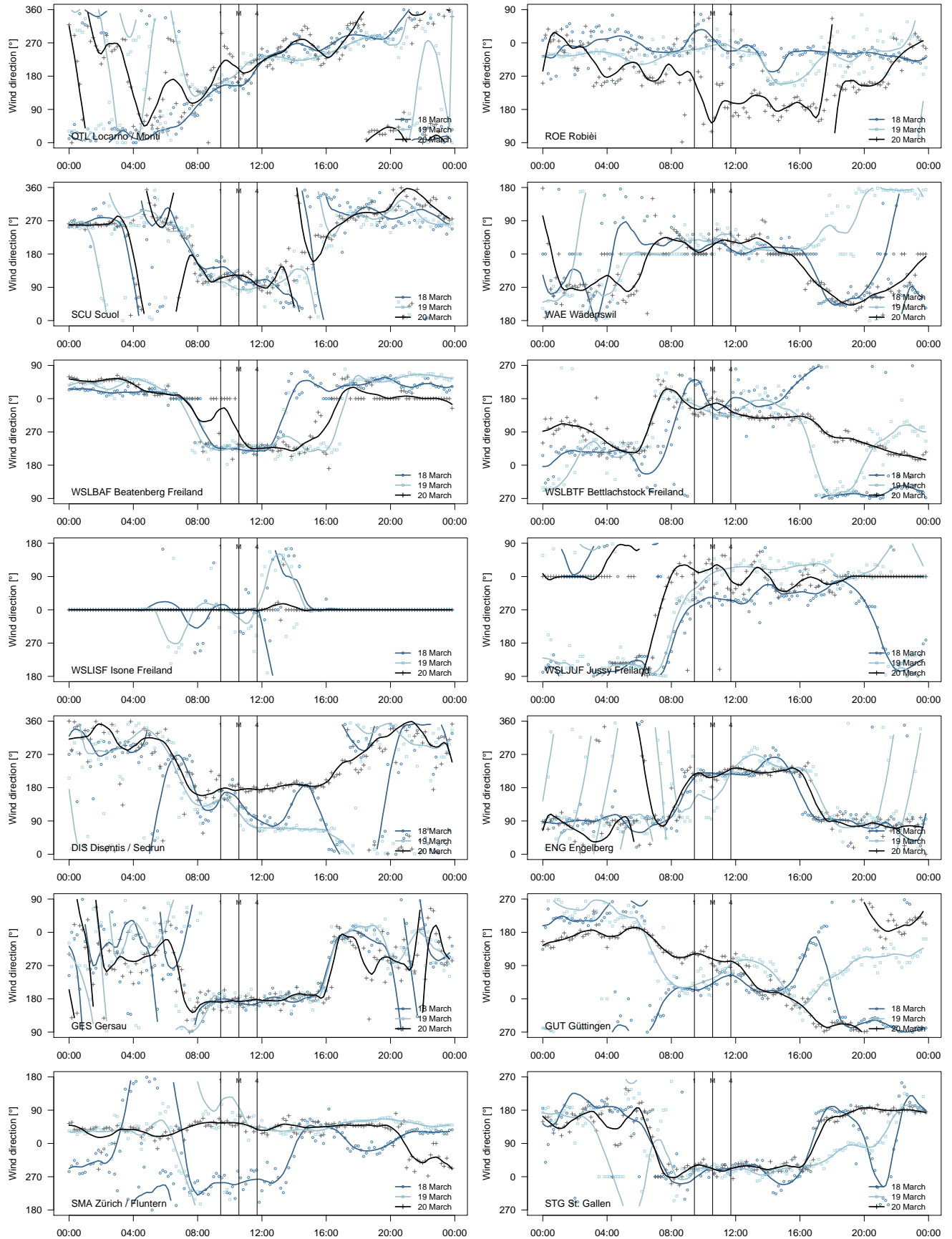


Figure S4. (continued)

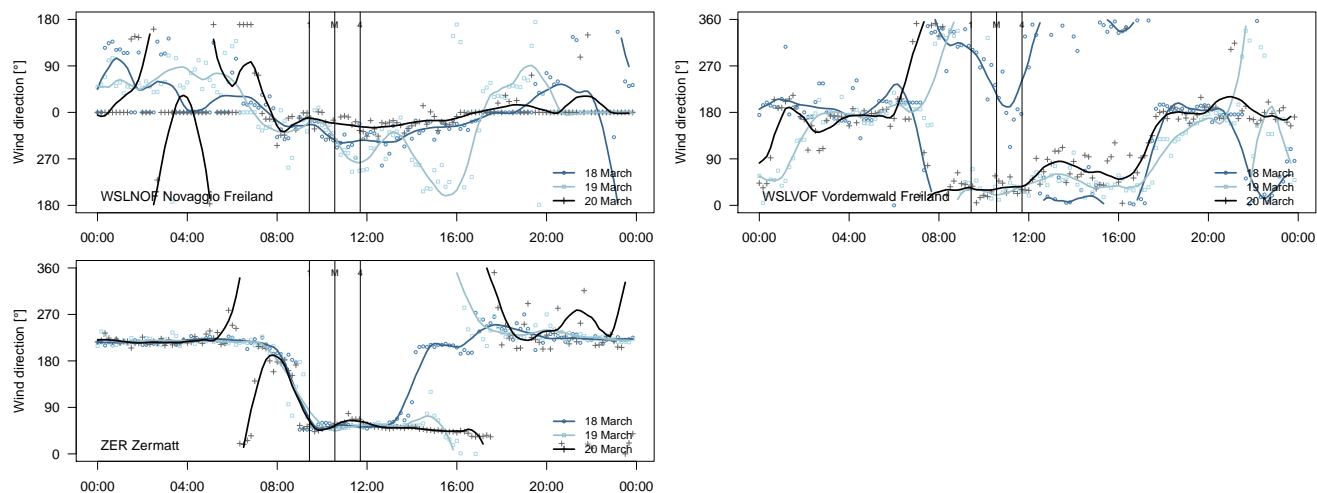


Figure S4. *(continued)*

Remarks

1. Some sites in Figures S1–S4 show a constant wind direction (0° , 270°) if the wind vane was blocked during low-wind or other blocking conditions, namely at night.
2. The span for the loess fits (bold lines in Figures S1–S4) was set to 4 hours
3. The decision where to interrupt the loess fit lines was made automatically: if the magnitude of directional change between two data points was 200° or more, then the line was interrupted. Lines were also interrupted when data were missing.