Wetter & Wind - Wie ich es sehe

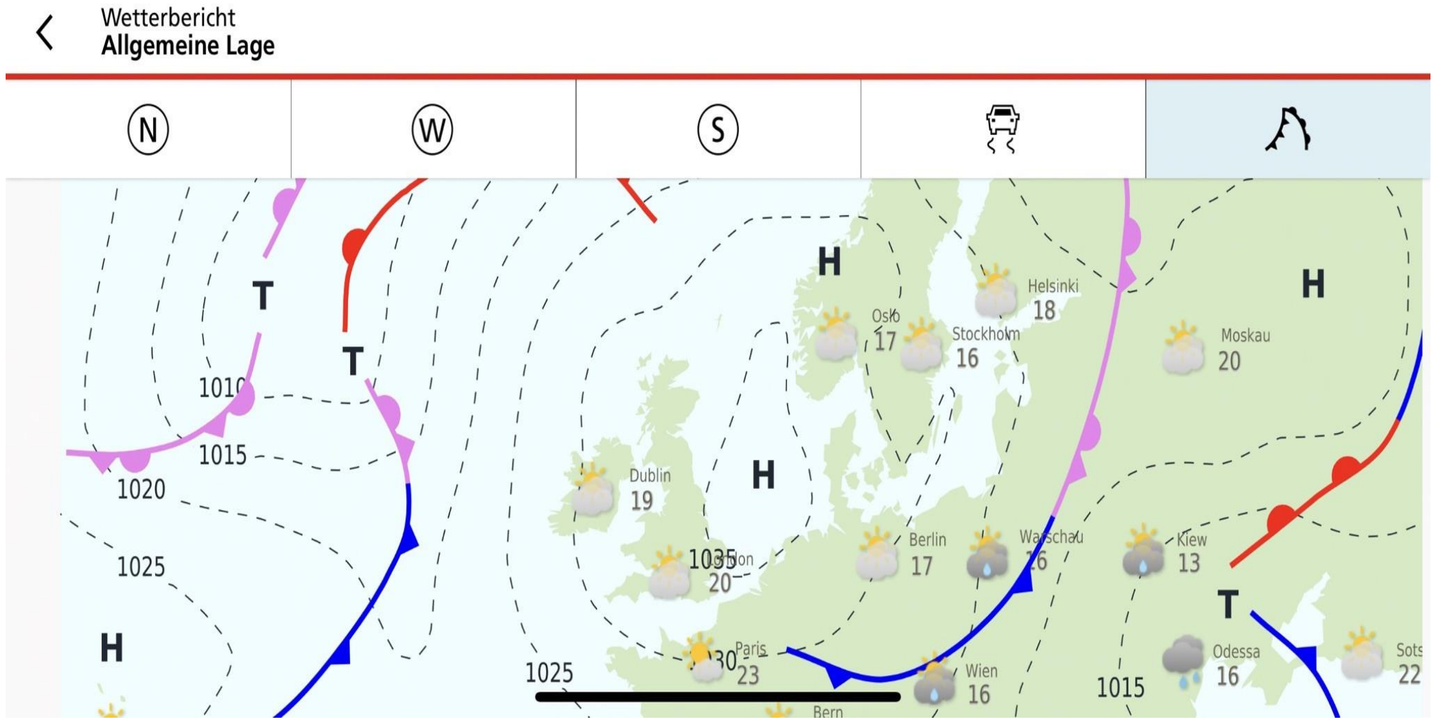
Thomas Rudolphi

Quellen

Gehört und gesehen beim Meteorologen Sven Plöger (ARD)
Meteoswiss (App)
Meteoblue
Windfinder
WetterOnline (Deutscher Wetterdienst)
Windy – App

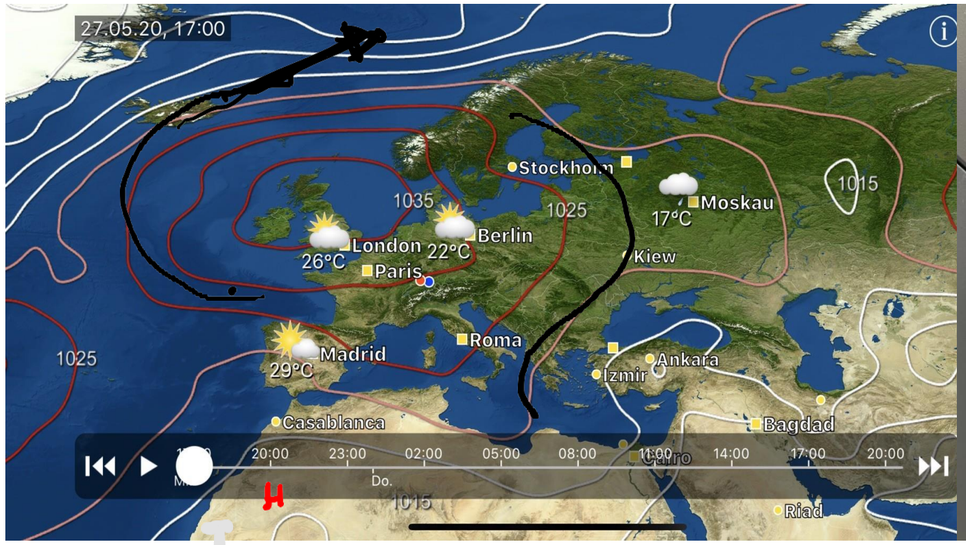
Frank Bethwaite - High Performance Sailing

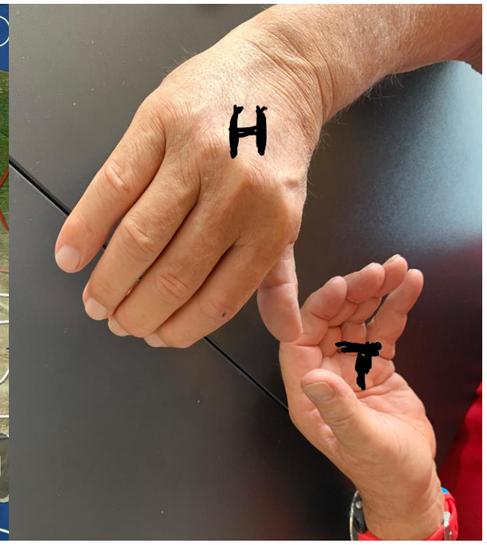
STG (Sailing Team Germany - SAP) Youtube

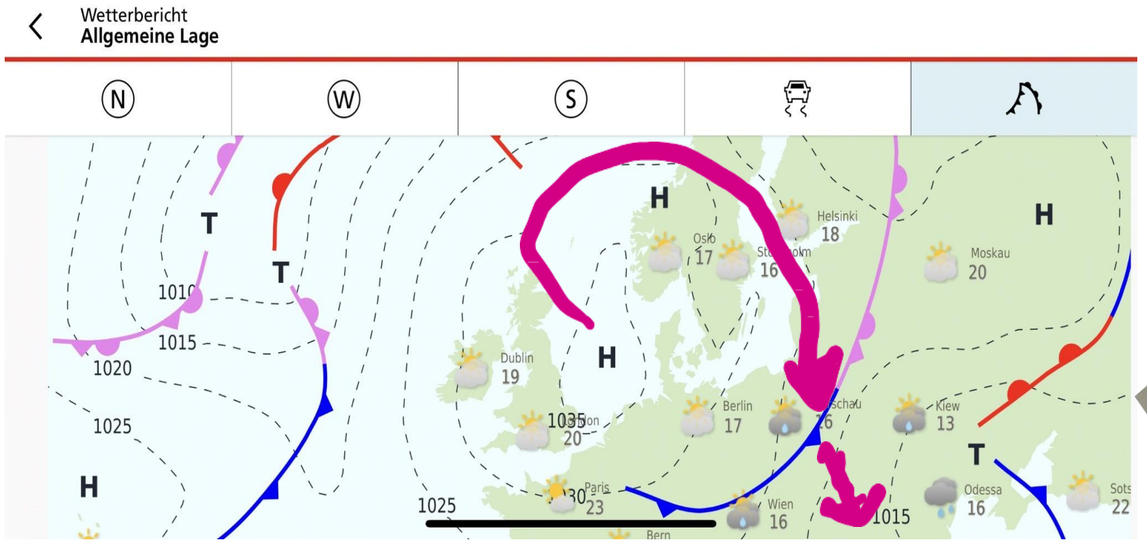


Wo ist das Tief?

Man stellt sich mit dem Rücken gegen den Wind und streckt den linken Arm aus: Die Finger zeigen auf das Tief.



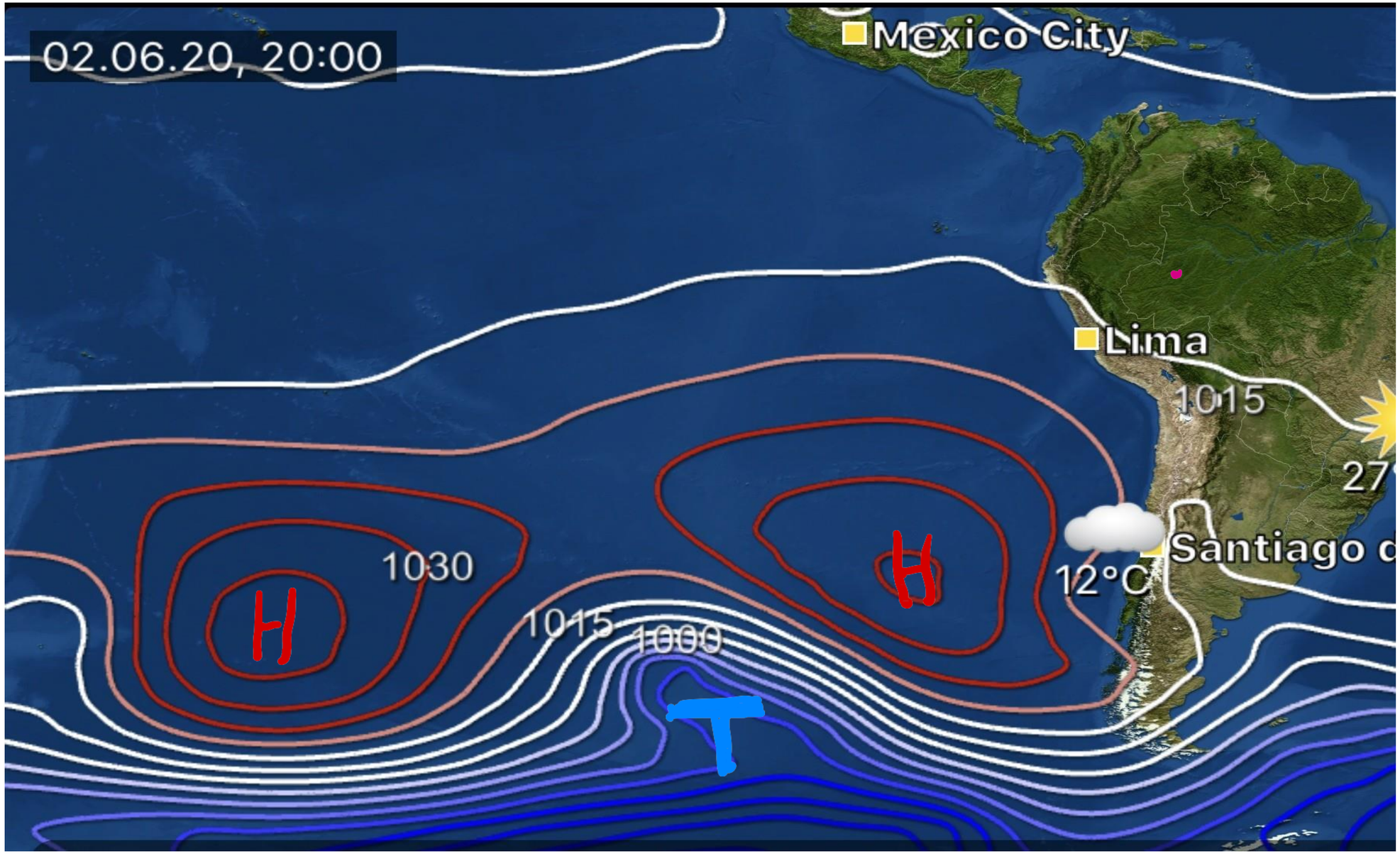




Nordhalbkugel:
Wind aus dem Hoch
zum Tief
entlang der Isobaren

N

W


02.06.20, 20:00
Mexico City
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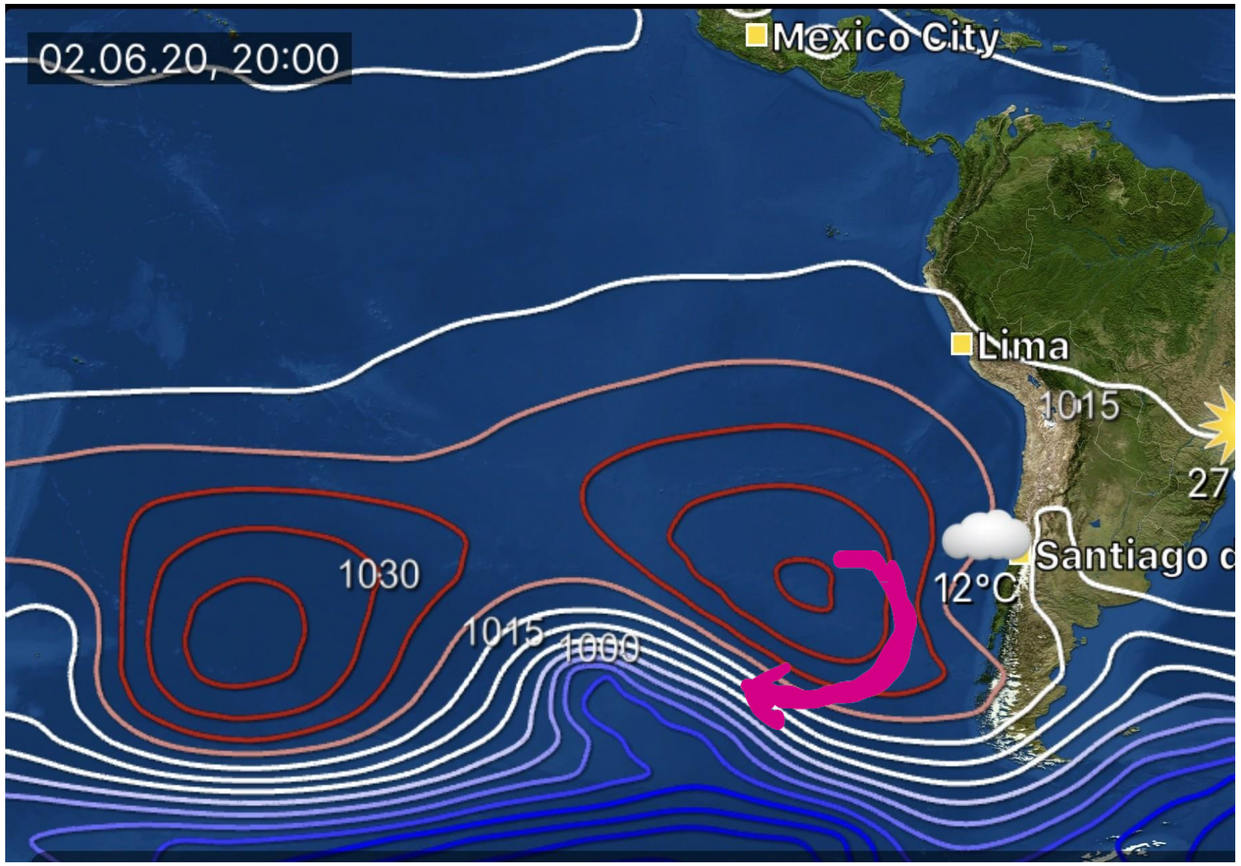
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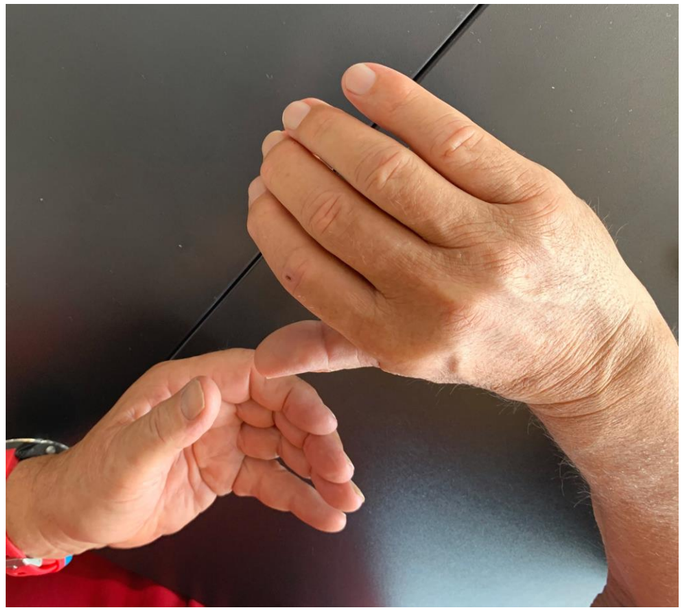

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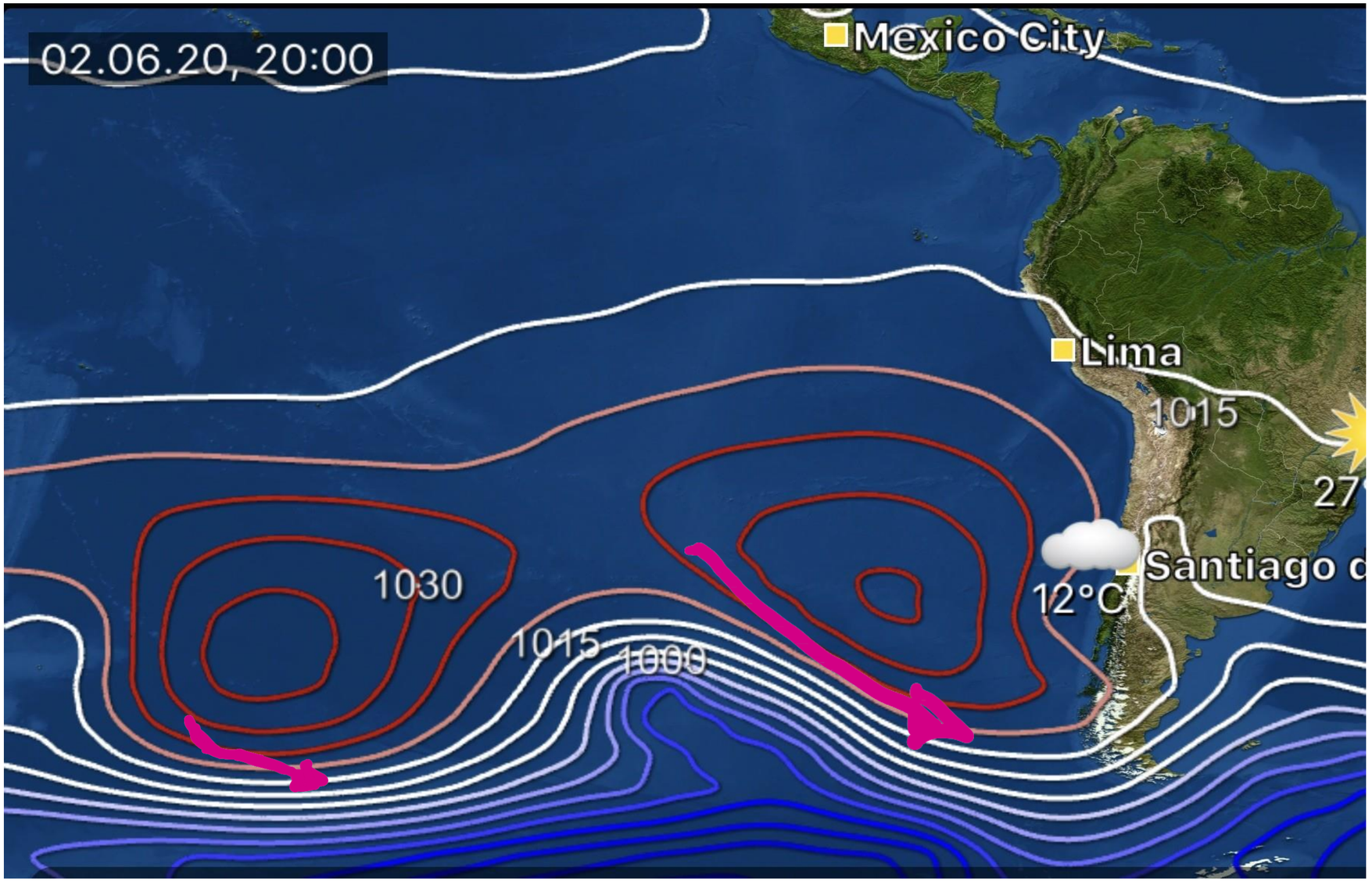
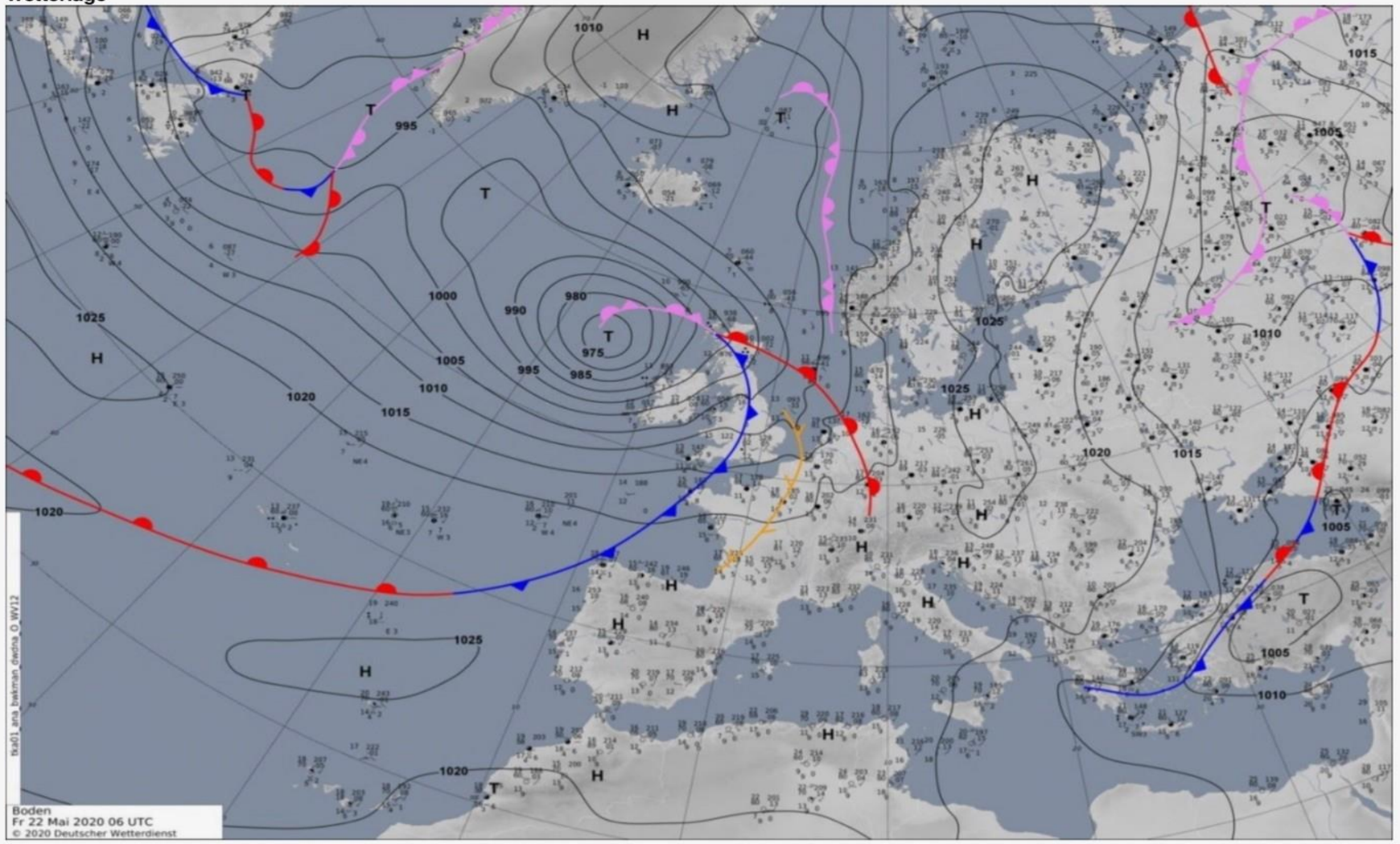


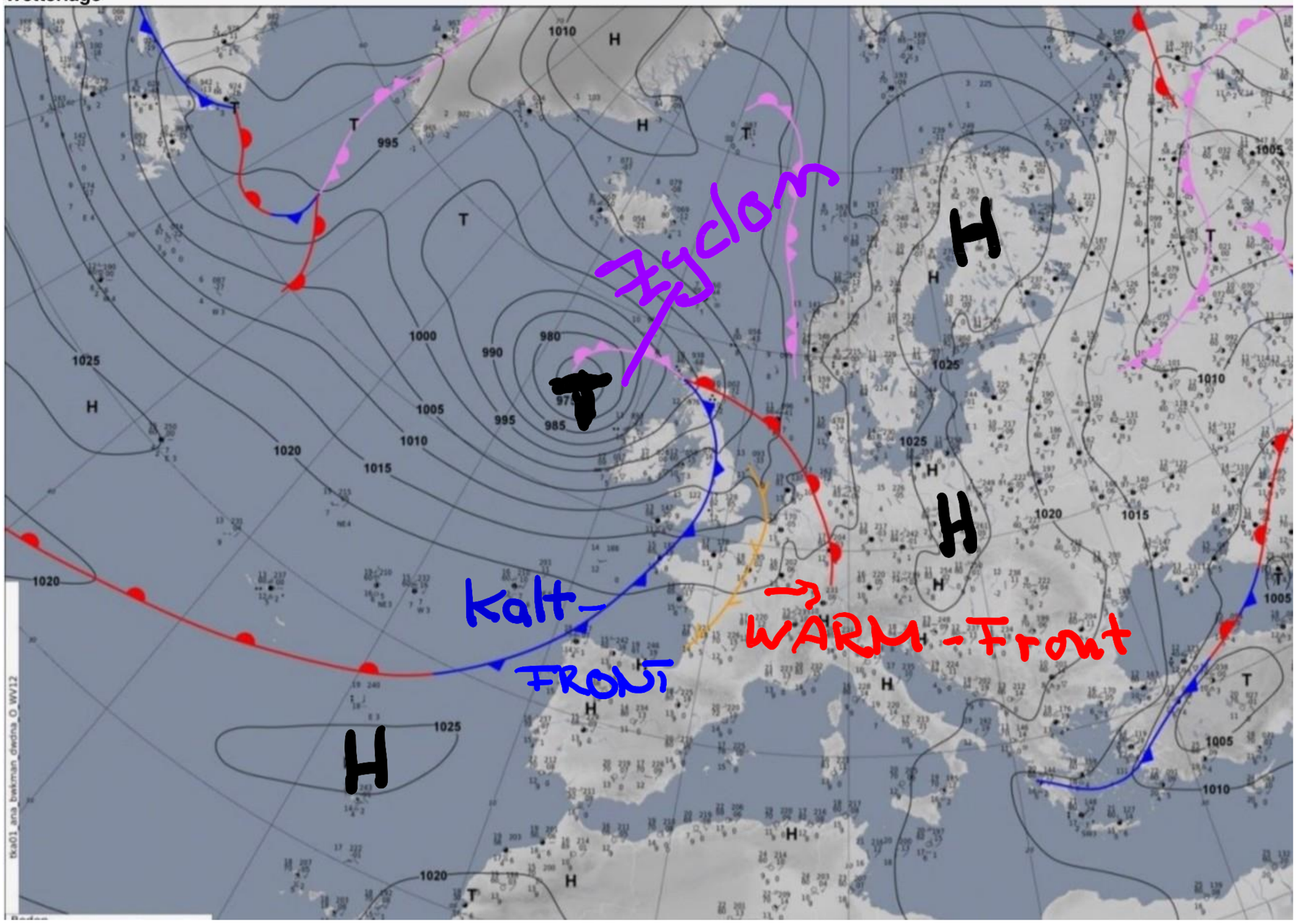
Neín!!! Südhalbkugel – Roary Fourties!

Wetterlage



Bodenanalyse mit Fronten von heute Morgen um 6 UTC. In rot die im Norden vorbeiziehende Warmfront, in orange ist eine sogenannte Konvergenzzone markiert, in blau die Kaltfront, welche uns morgen Samstag erfasst.
Quelle: Deutscher Wetterdienst, DWD

Wetterlage


Zyclon
Kalt-
FRONT
WARM-Front
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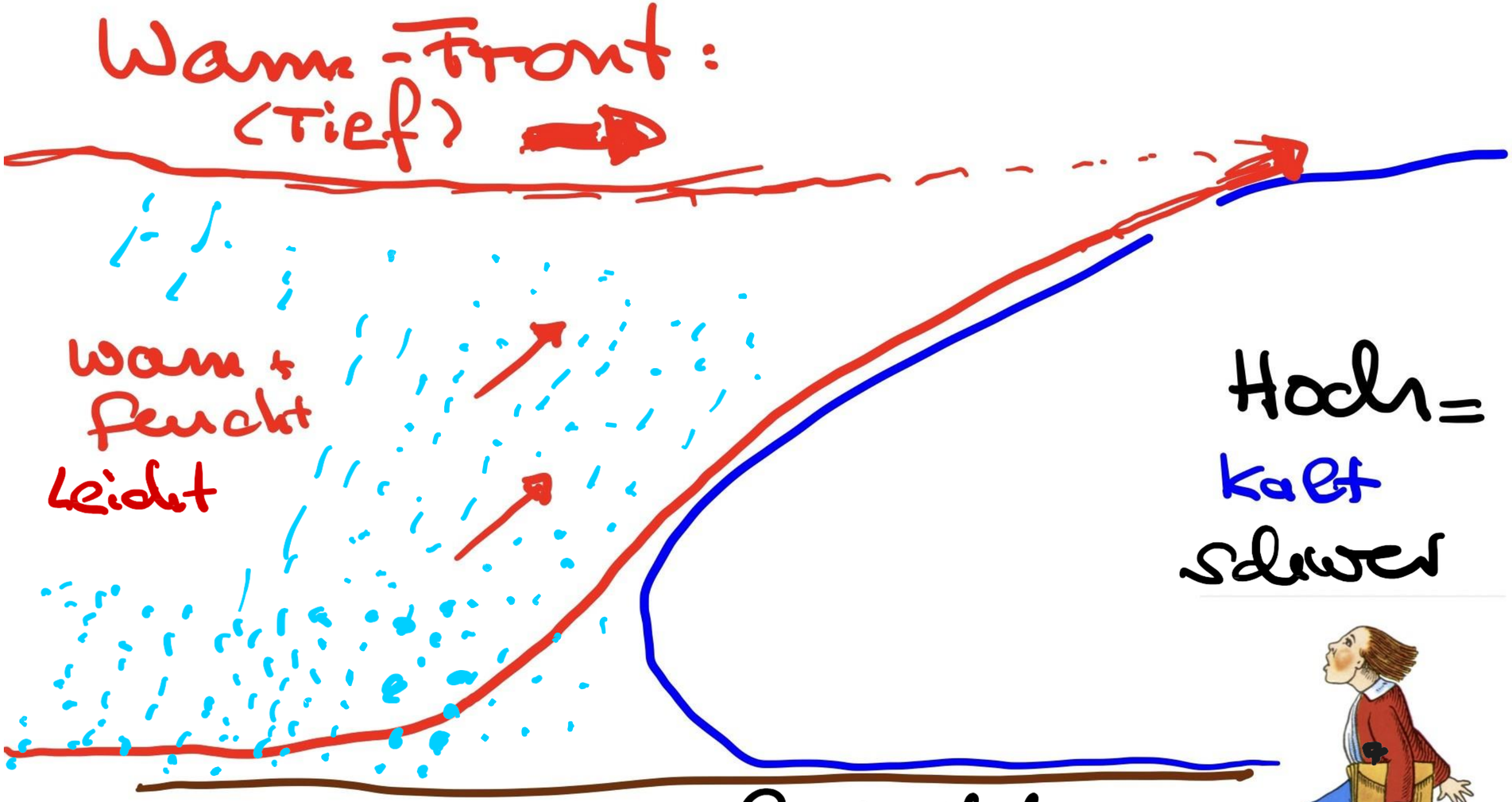
1005

Warm Front:

(Tief) →

warm + feucht

Hoch = kalt



Feuchte + warme Luft kühlt als

+ Kondensiert ⟹ REGEN

uckbrückentag

sst.
tterdienst, DWD

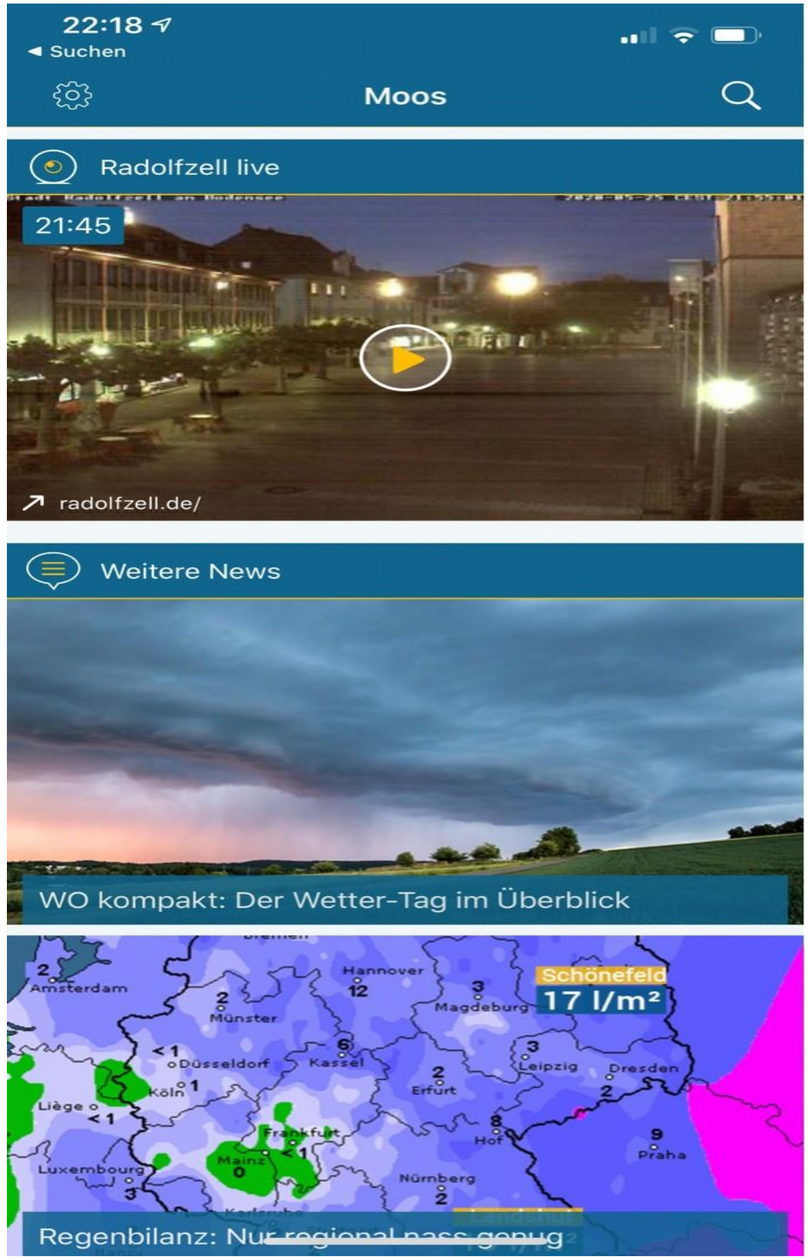
gen Tag war eine Hochdruckbrücke für unser Wetter verantwortlich. Diese erstreckte sich vom Atlantik bei Madeira über den Alpenraum bis nach penraum zeigte die Analyse bereits eine ausgesprochen flache Druckverteilung.

n auffälligste des heutigen Tages waren sicherlich die teils dichteren Schleierwolken, welche uns aus Nordwesten erfassten. Im Tagesverlauf kam nittelhohe Schichtbewölkung dazu. Dabei handelte es sich um Ausläufer der Warmfront nördlich von uns.

ng

f der Bewölkungsverhältnisse an unserer Wetterkamera mit Blick auf den Grimselpass. Am frühen Morgen (5 UTC, oben) waren erst wenige Eiskristallwolken am Himmel, zwei C, Mitte) war der Himmel mit dünnen Schleierwolken überzogen, um 8.40 UTC (unten) hat sich die Bewölkung weiter verdichtet. In der Folge lockerte sich die Bewölkung auf, im Laufe des Nachmittags zog ein weiterer Schub mit Schleierwolken durch.

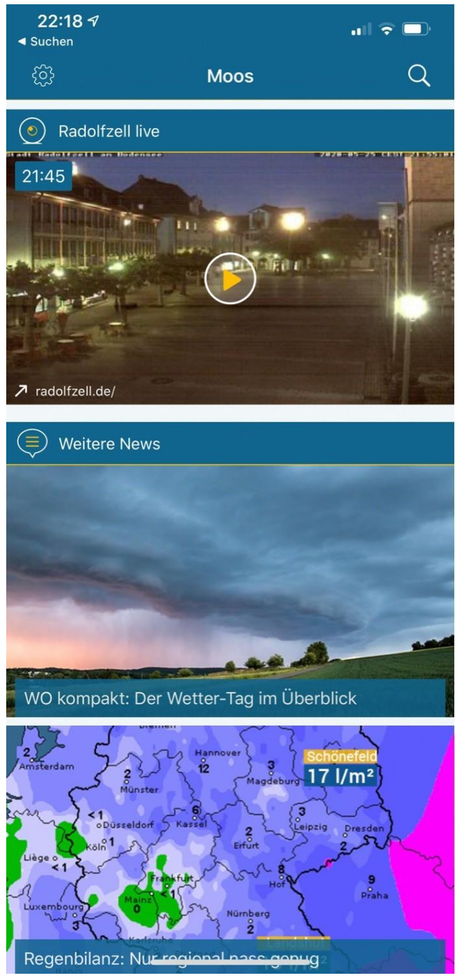
nten ist, dass sich deren Bewölkung zuerst im obersten Wolkenstockwerk (oberhalb von 7000 Metern) zeigt. Dabei handelt es sich um Wolken, die iskristallen bestehen (Cirren, Cirrostratus). Vor allem in der ersten Phase lassen diese das Sonnenlicht durch, mit der Zeit erscheint die Sonne aber milchig.



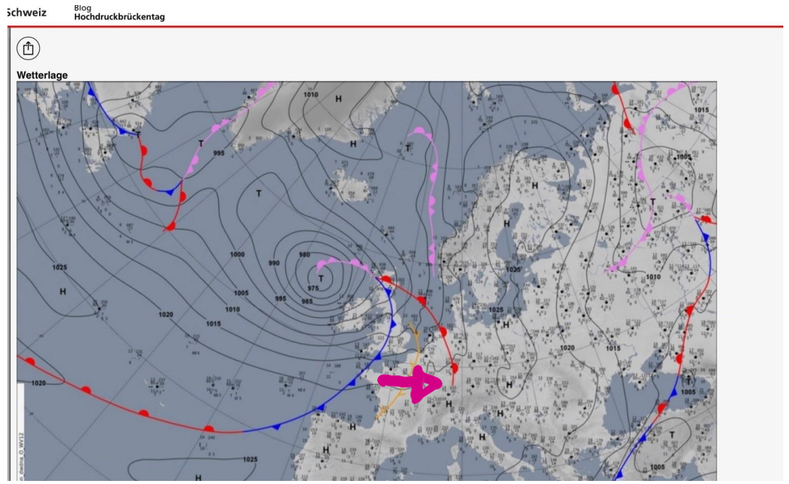
Nach der Warmfront:
Rückseitenwetter

+

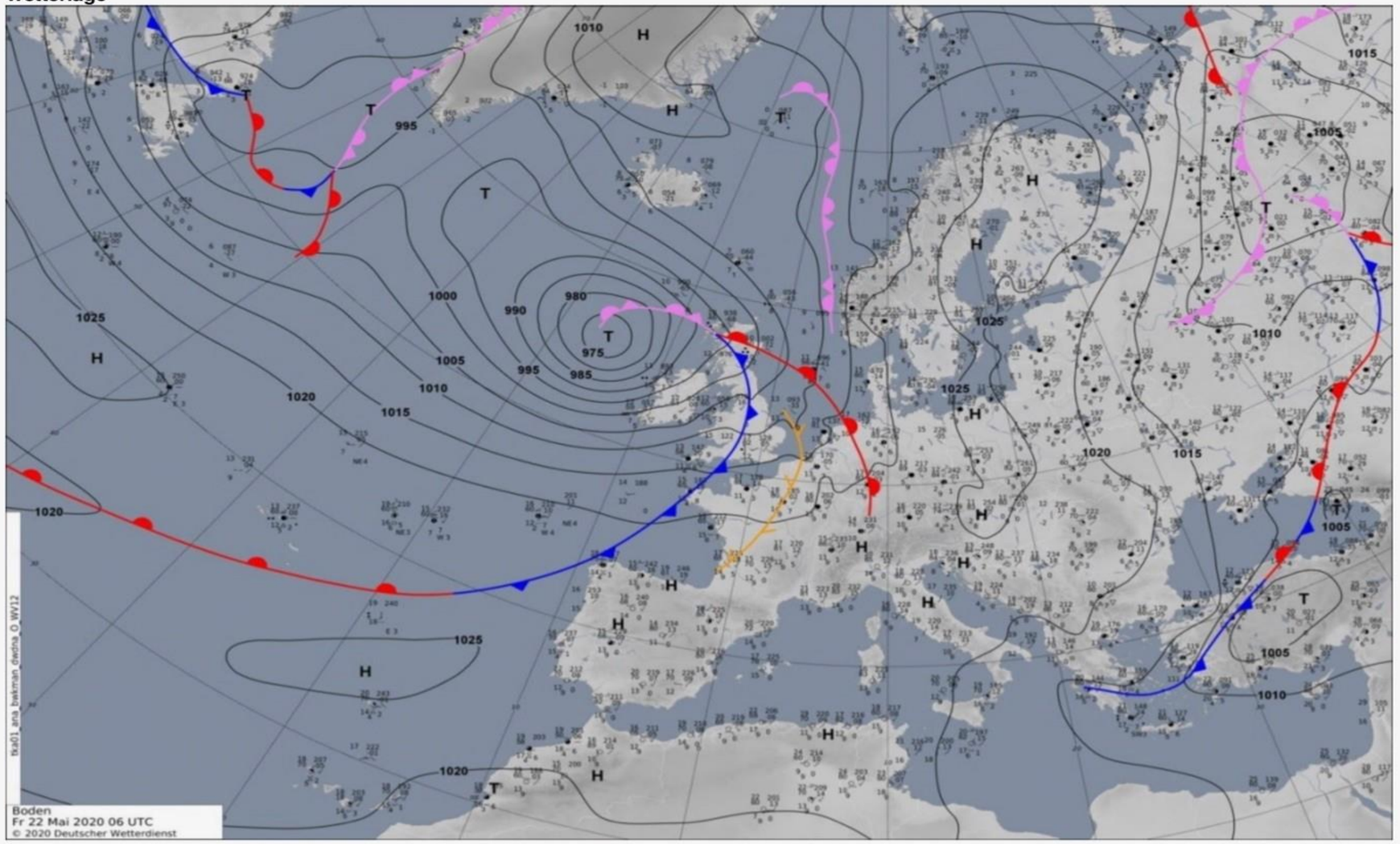
Kaltfront
häufig
Regenbogen!



Nach der Warmfront: „Rückseiten wetter"



Wetterlage



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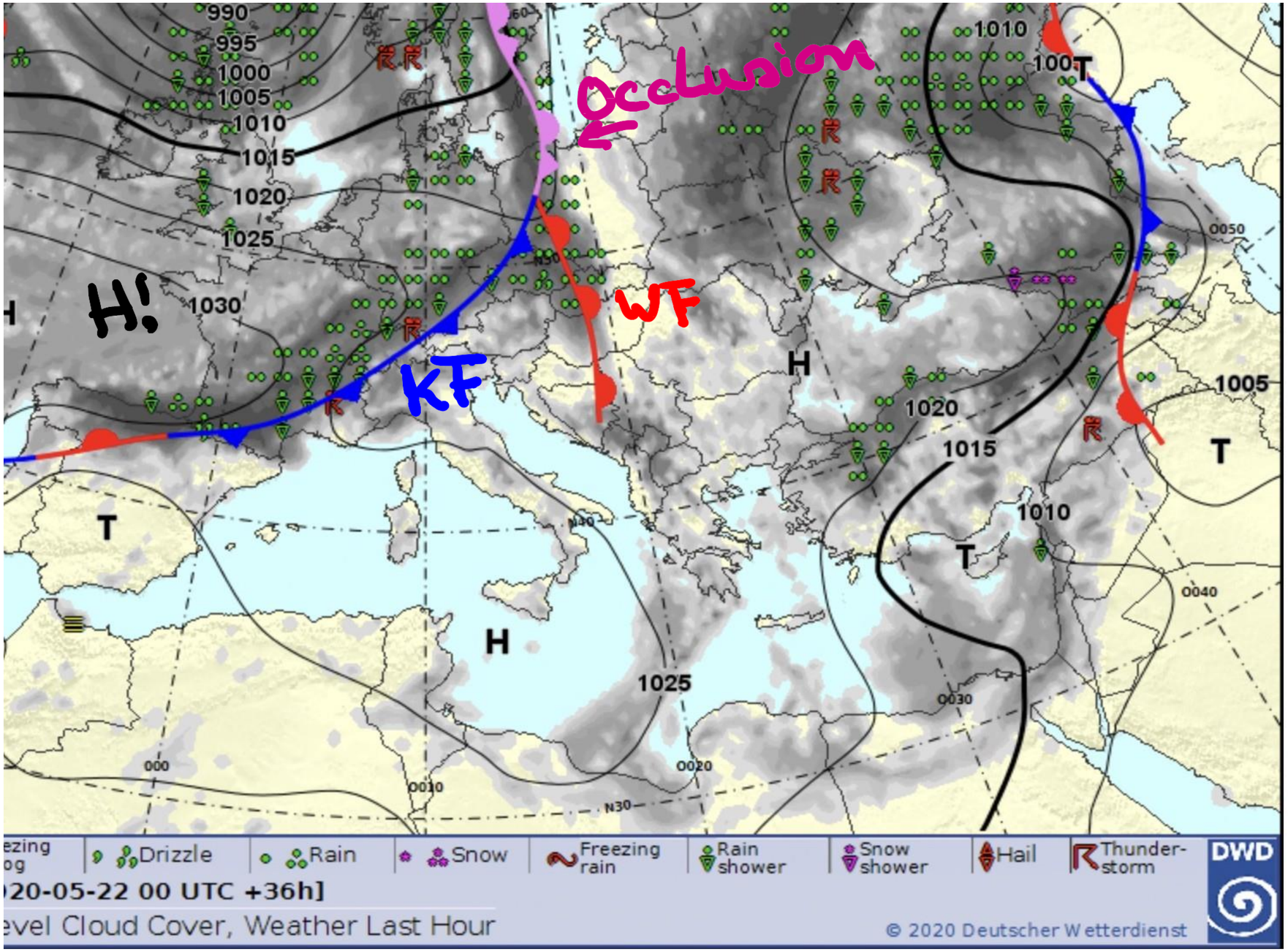
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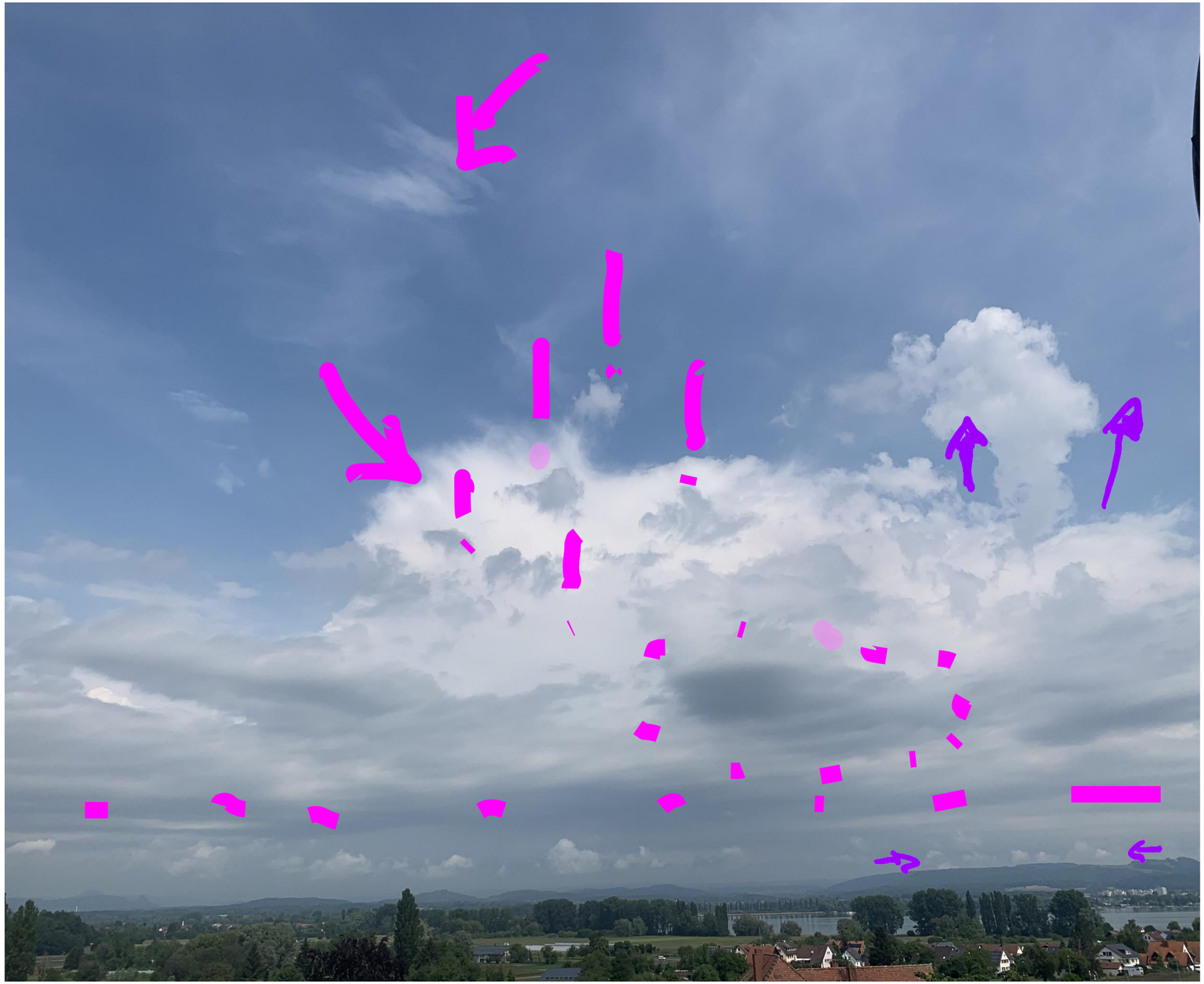
Drizzle
Rain
Snow
Freezing rain
Rain shower
Snow shower
Hail
Thunder-storm
DWD
20-05-22 00 UTC +36h]
evel Cloud Cover, Weather Last Hour
© 2020 Deutscher Wetterdienst


17:46 Samstag 23. Mai
100 %
Europa
23.05.20, 16:45
Oslo
København
Amsterd...
Berlin
London
Brüs...
Pra...
Paris
München
Wien
Bern
Mila...
Roma
Barcelo...
Madrid
Algi...
15:00
16:00
18:15
19:15
Sa.
Wetter
Favoriten
Karten
Rad/Sat
Mehr

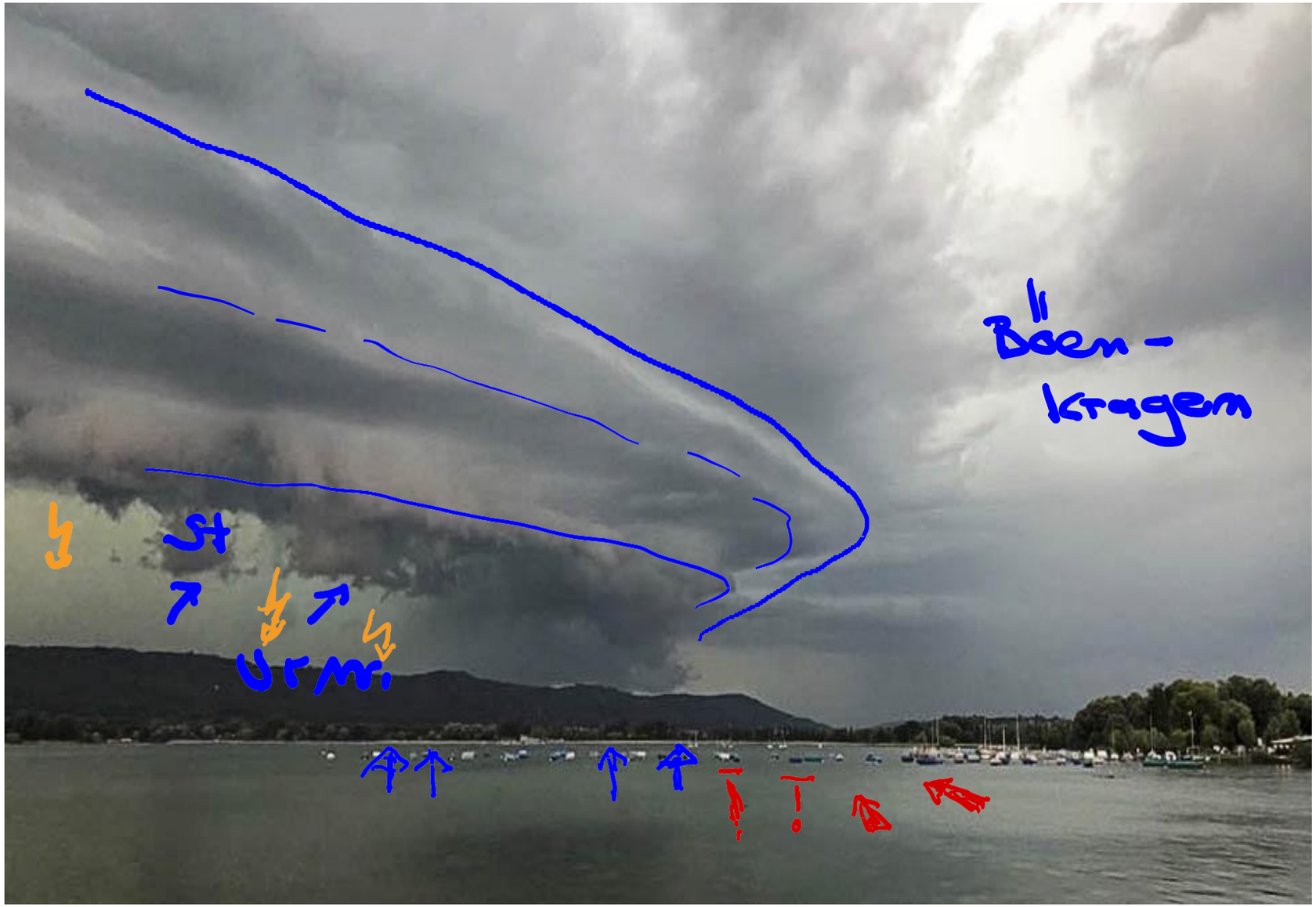
Vertikale Strukturen

→

ACTION

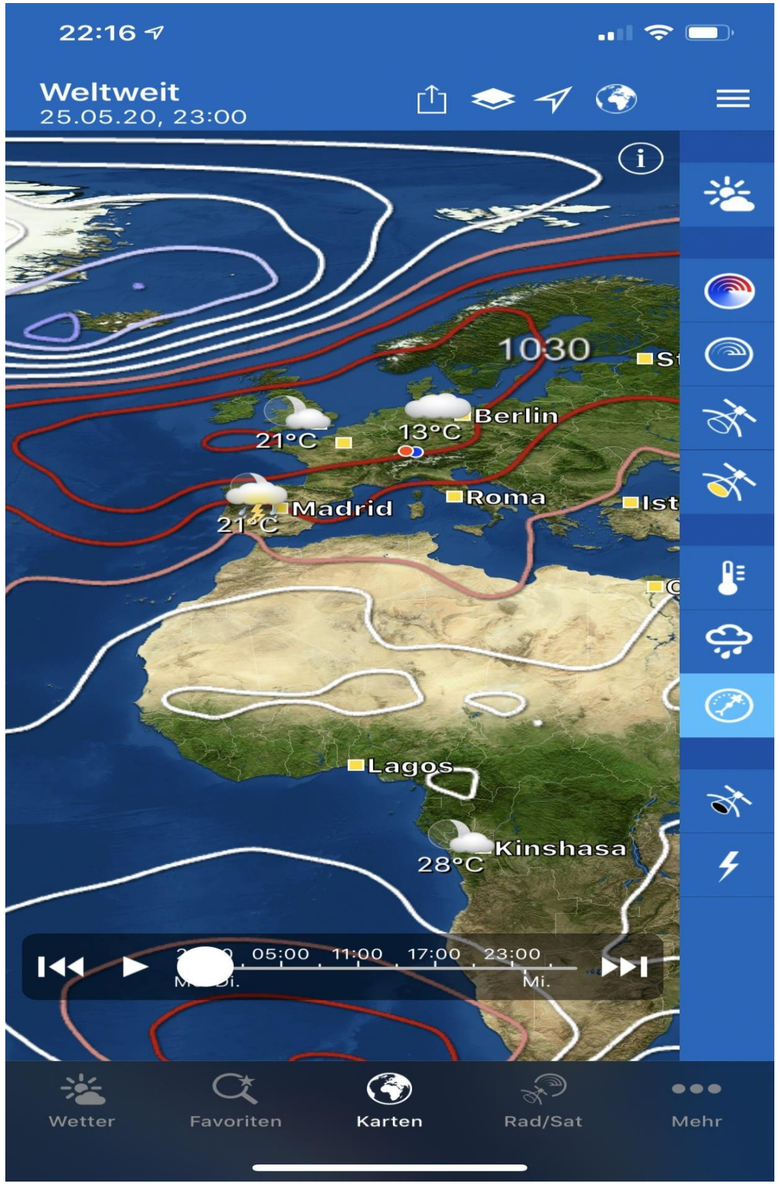


Wetter - Beruhigung



Böenkragen = Sturm Bft 8+, > 35 kt Wind

„Ansaugwind“

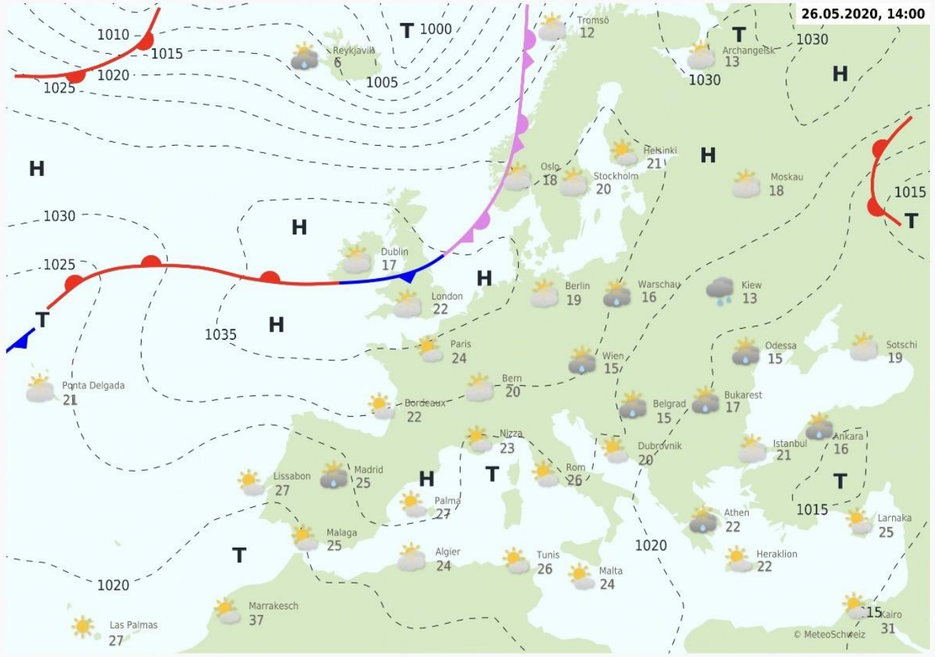


Wetterbericht
Allgemeine Lage

N	W	S	

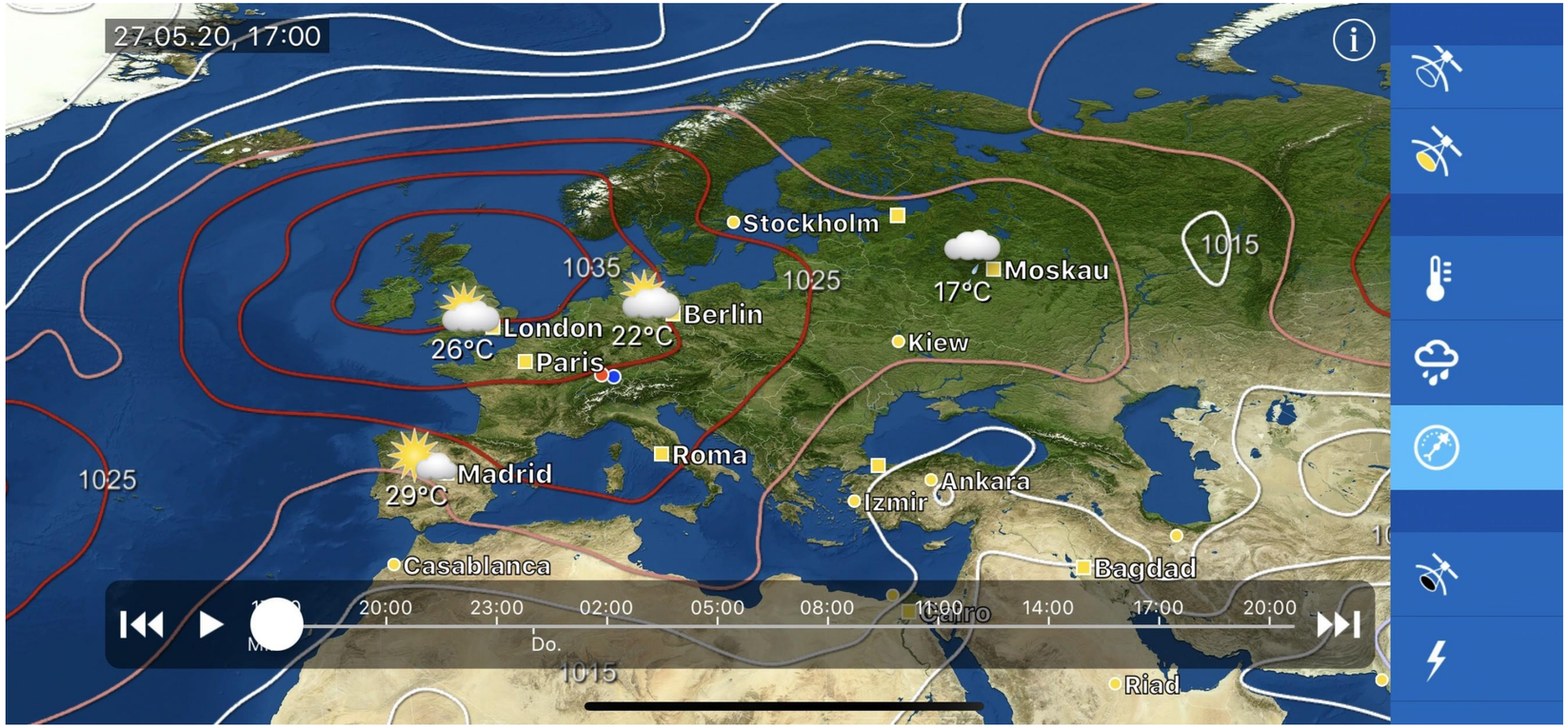
Aktualisiert am 25.05.2020, 16:36

Ein kräftiges Hochdruckgebiet mit Schwerpunkt im Südwesten Englands bestimmt ir
nächsten Tagen. Eine nördliche Höhenströmung führt zeitweise etwas feuchtere Luf



Kaltfront
Warmfront
Okklusion
H T — Hoch / Tief
985 — Isobaren mit Luftdruck

Hochdruckwetter – Lage (hier „Hochdruckbrücke“)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1035
1025
1015
Moskau
17°C
Berlin
London
22°C
26°C
Paris
Kiew
Roma
Madrid
29°C
1025
Ankara
Izmir
Casablanca
Bagdad
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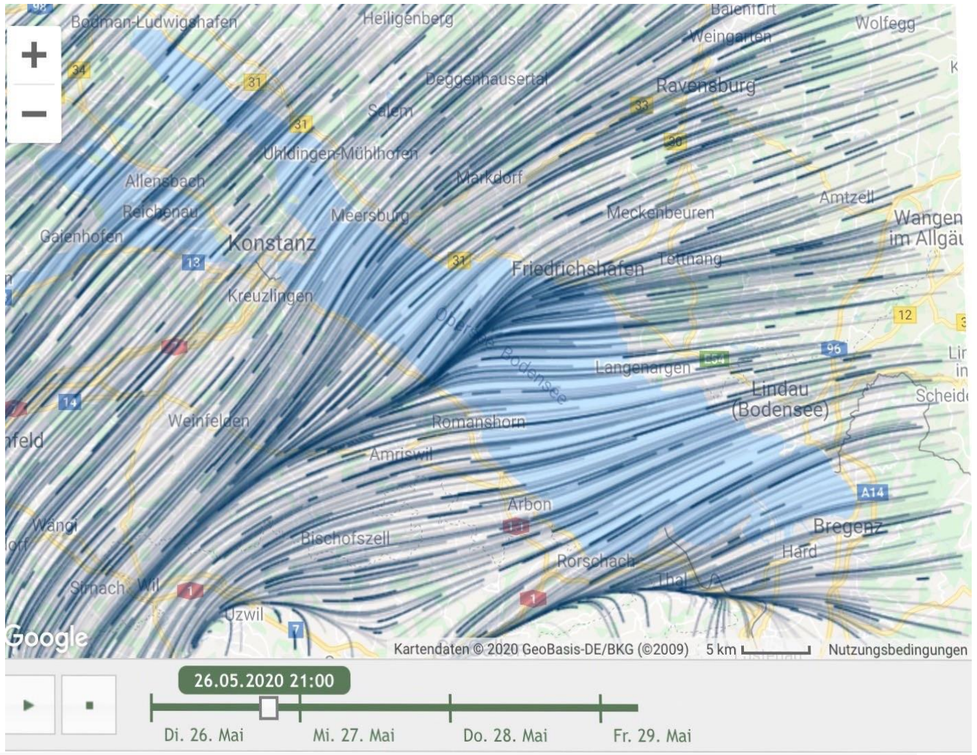
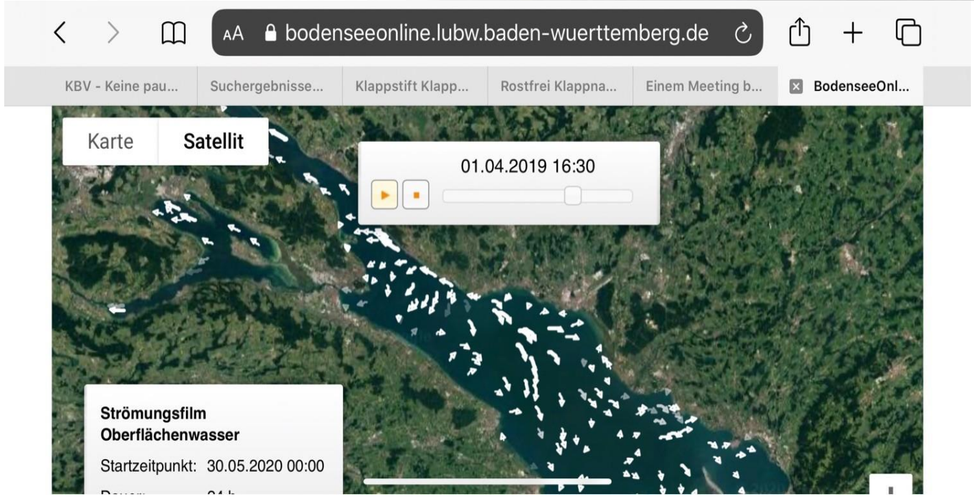
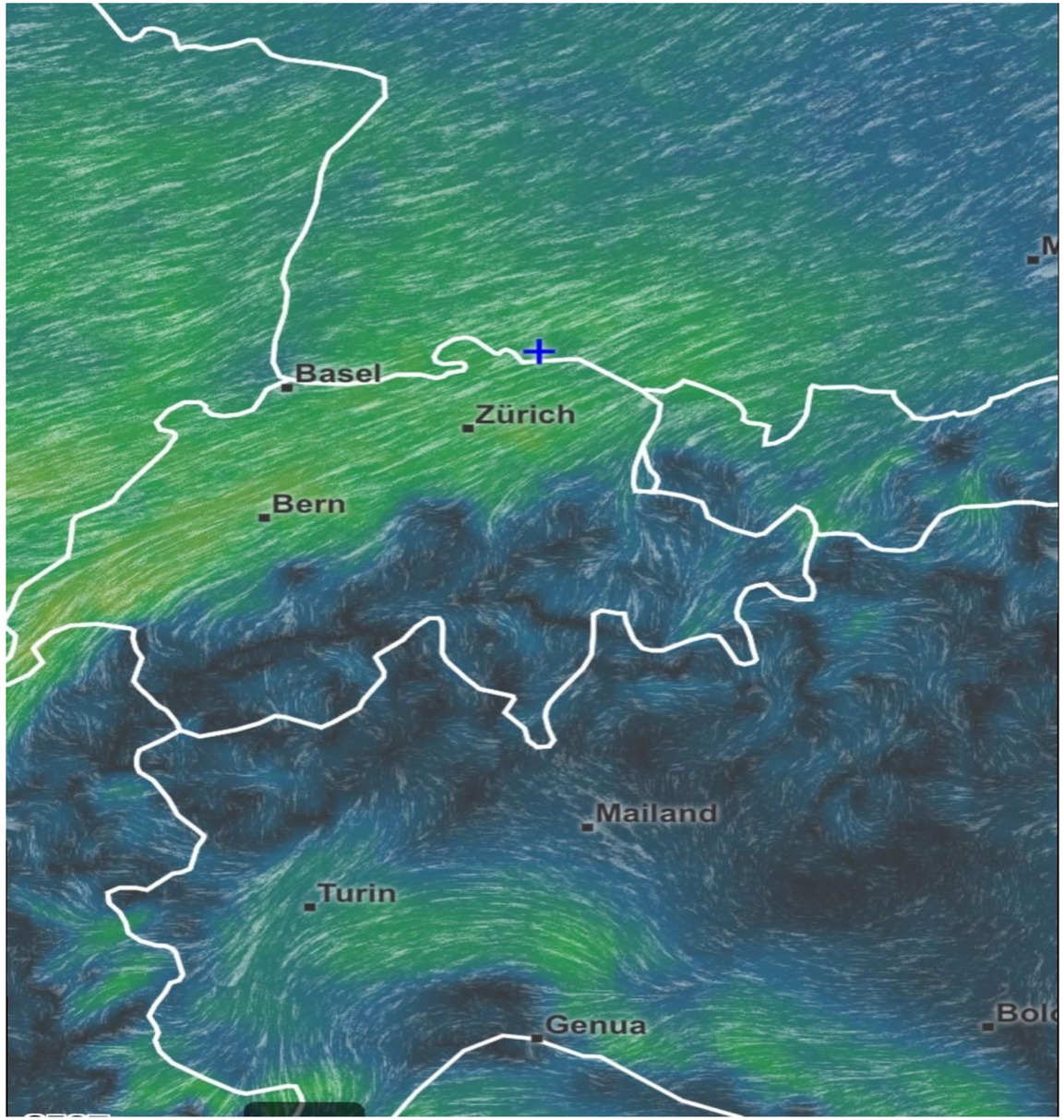

Bodman-Ludwigshafen
Heiligenberg
Wolfegg
Ravensburg
Salem
Überlingen-Mühlhorn
Markdorf
Meersburg
Meckenbeuren
Amtzell
Wangen im Allgäu
Konstanz
Kreuzlingen
Friedrichshafen
Tettnang
Langenargen
Lindau (Bodensee)
Weinfelden
Romanshorn
Amriswil
Arbon
Bischofszell
Rorschach
Bregenz
Hard
Uzwil
Google
Kartendaten © 2020 GeoBasis-DE/BKG (©2009)
5 km
Nutzungsbedingungen
26.05.2020 21:00
Di. 26. Mai
Mi. 27. Mai
Do. 28. Mai
Fr. 29. Mai


bodenseeonline.lubw.baden-wuerttemberg.de
KBV - Keine pau...
Suchergebnisse...
Klappstift Klapp...
Rostfrei Klappna...
Einem Meeting b...
BodenseeOnl...
Karte
Satellit
01.04.2019 16:30
Strömungsfilm
Oberflächenwasser
Startzeitpunkt: 30.05.2020 00:00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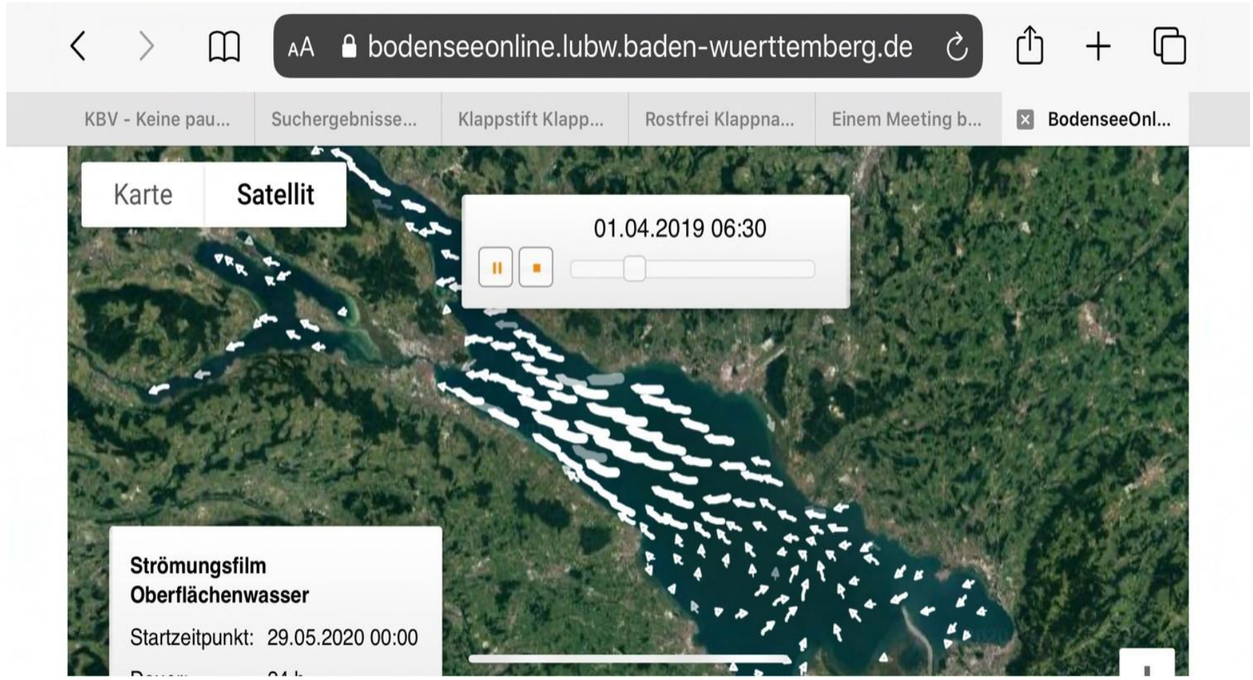
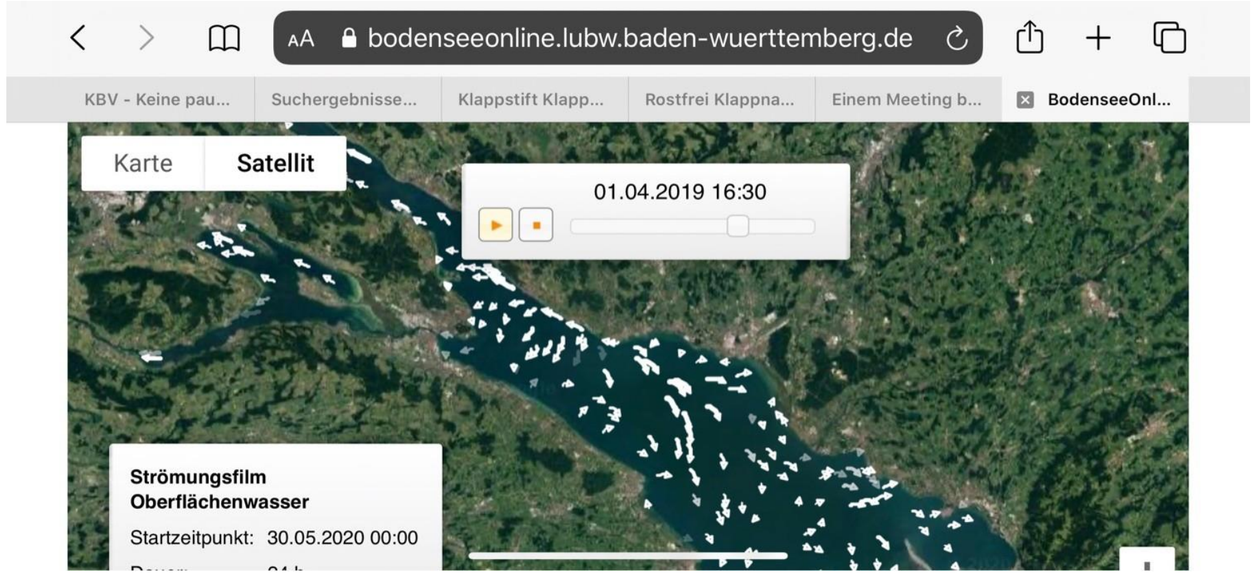
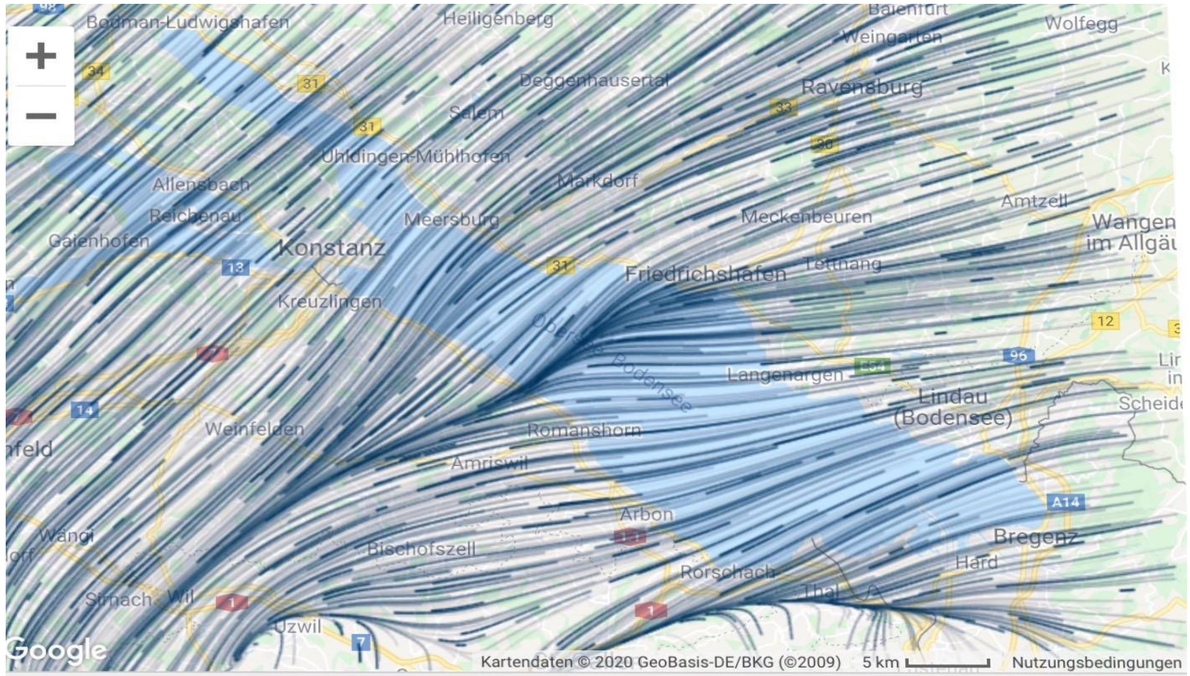
Zürich
Bern
Mailand
Turin
Genua



6:30
wenig Wind



18:30
tagsüber
Bft 3 ½ - Bft 6


Bodman-Ludwigshafen
Heiligenberg
Baienfurt
Weingarten
Wolfegg
Ravensburg
Deggenhausertal
Salem
Uhldingen-Mühlhofen
Markdorf
Allensbach
Reichenau
Meersburg
Meckenbeuren
Amtzell
Wangen im Allgäu
Gaienhofen
Konstanz
Tettnang
Friedrichshafen
Kreuzlingen
Langenargen
Lindau (Bodensee)
Weinfelden
Romanshorn
Amriswil
Arbon
Bischofszell
Bregenz
Hard
Rorschach
Uzwil
Google
Kartendaten © 2020 GeoBasis-DE/BKG (©2009)
5 km
Nutzungsbedingungen


26.05.2020 21:00
Di. 26. Mai
Mi. 27. Mai
Do. 28. Mai
Fr. 29. Mai

KBV - Keine pau...
Suchergebnisse...
Klappstift Klapp...
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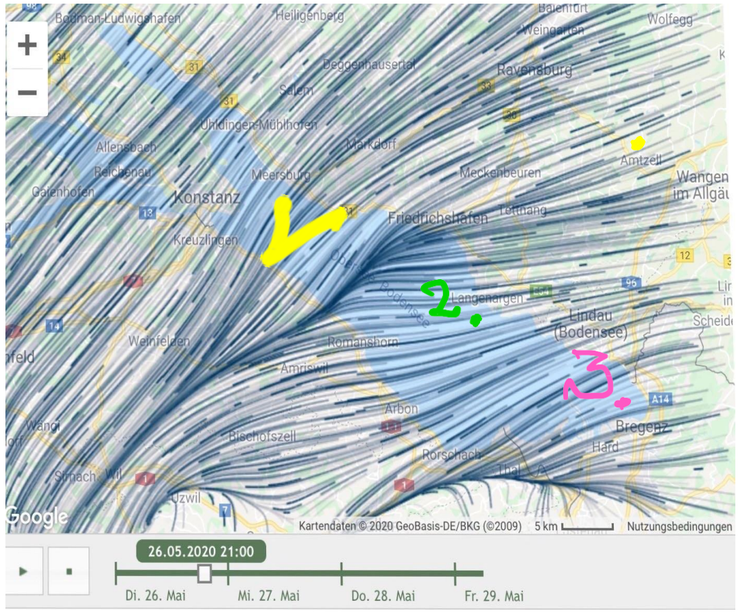
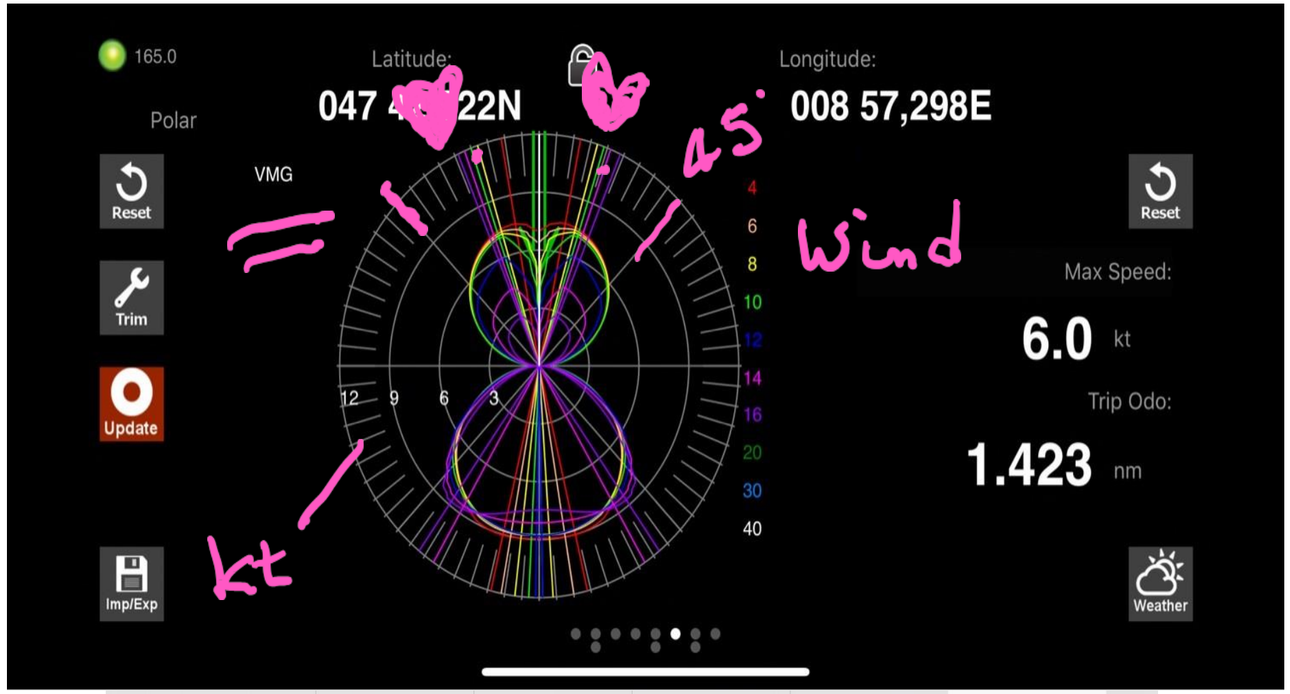
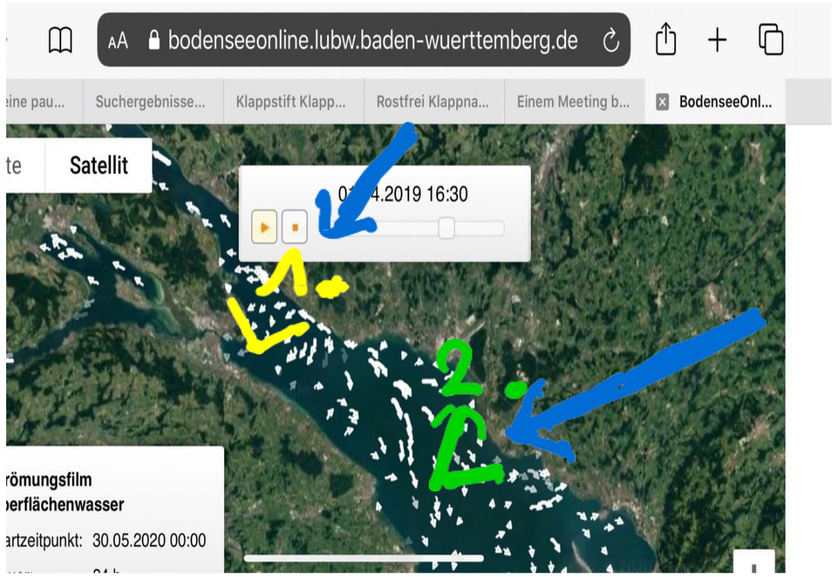
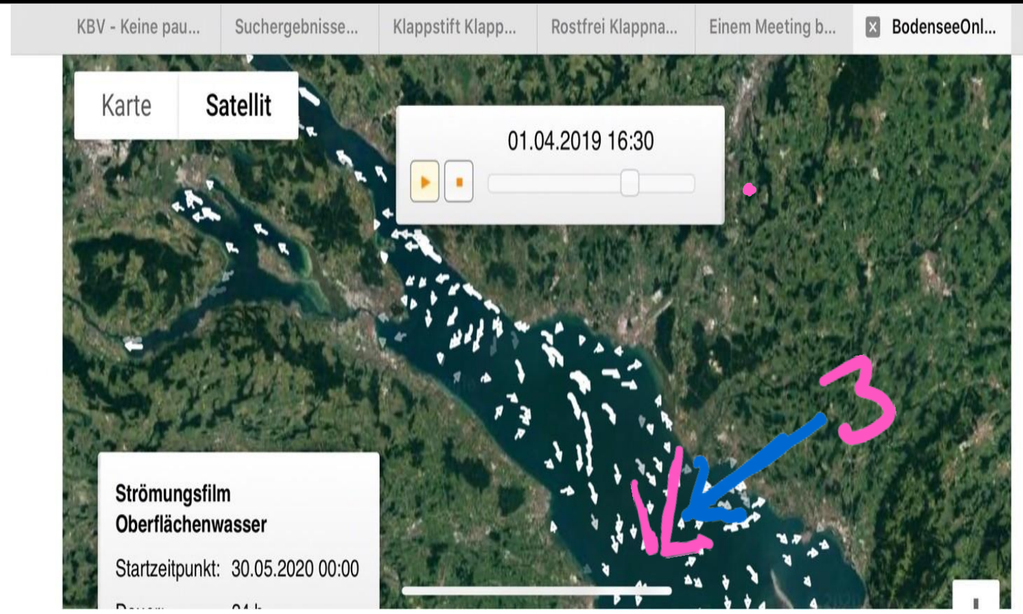
Einem Meeting b...
BodenseeOnl...


Karte
Satellit
01.04.2019 16:30
Strömungsfilm
Oberflächenwasser
Startzeitpunkt: 30.05.2020 00:00









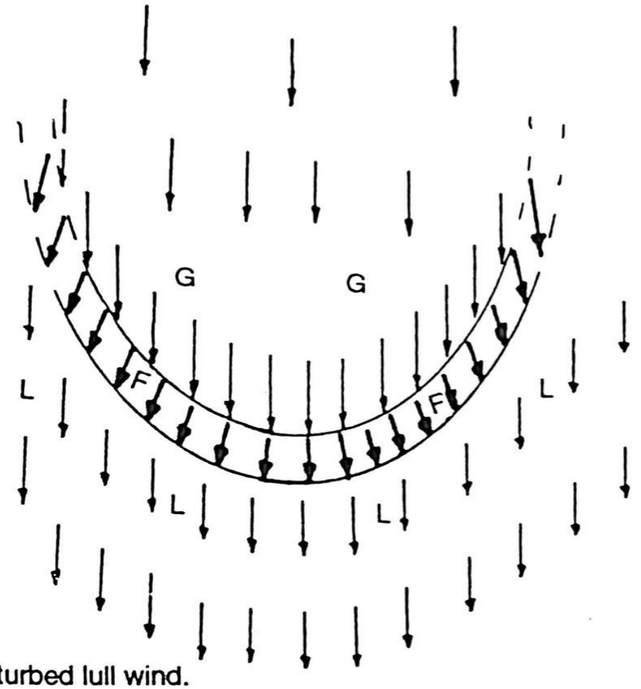
VMG
Velocity made good

Erfolgs-
geschwindigkeit


Horn
Balesheim
Hornstaad
3
Gaienhofen
4
Untersee
Berli
Steckborn


00:32
Karte
Standard
Satellit
Hybrid
33
Dürrenhof
Böhringen
Mindelsee
Radolfzell
am Bodensee
Markelfingen
L220
Markelfinger
Winkel
Mettnau
Moos
Iznang
Bankholzen
Bettnang
L192
Gundholzen
6162
Horn
Balesheim
Hornstaad
Langenmoos
Gaienhofen
Berlingen
Hemmenhofen
Marbach
Steckborn
Glarisegg
Neuburg
Tägermoos
Salen-
Reutenen
Saasenloo
Eugerswil
Gündelhart
Homburg
Hörhausen
Ammenhausen
Karten
Hauptstrasse
Ober-
Hörstetten
Dettighofen
Rechtl. Informationen

Fig 5.12(b) The appearance of gusts from height



L Undisturbed lull wind.

G Gust wind which undercuts the lull wind.

F The 'fan', a fringe of air 25 to 50 feet wide which is displaced outwards by the advancing gust, in a direction away from the gust edge

The fan passes over the water too quickly to form wind lanes.

Fig 5.14 The fan

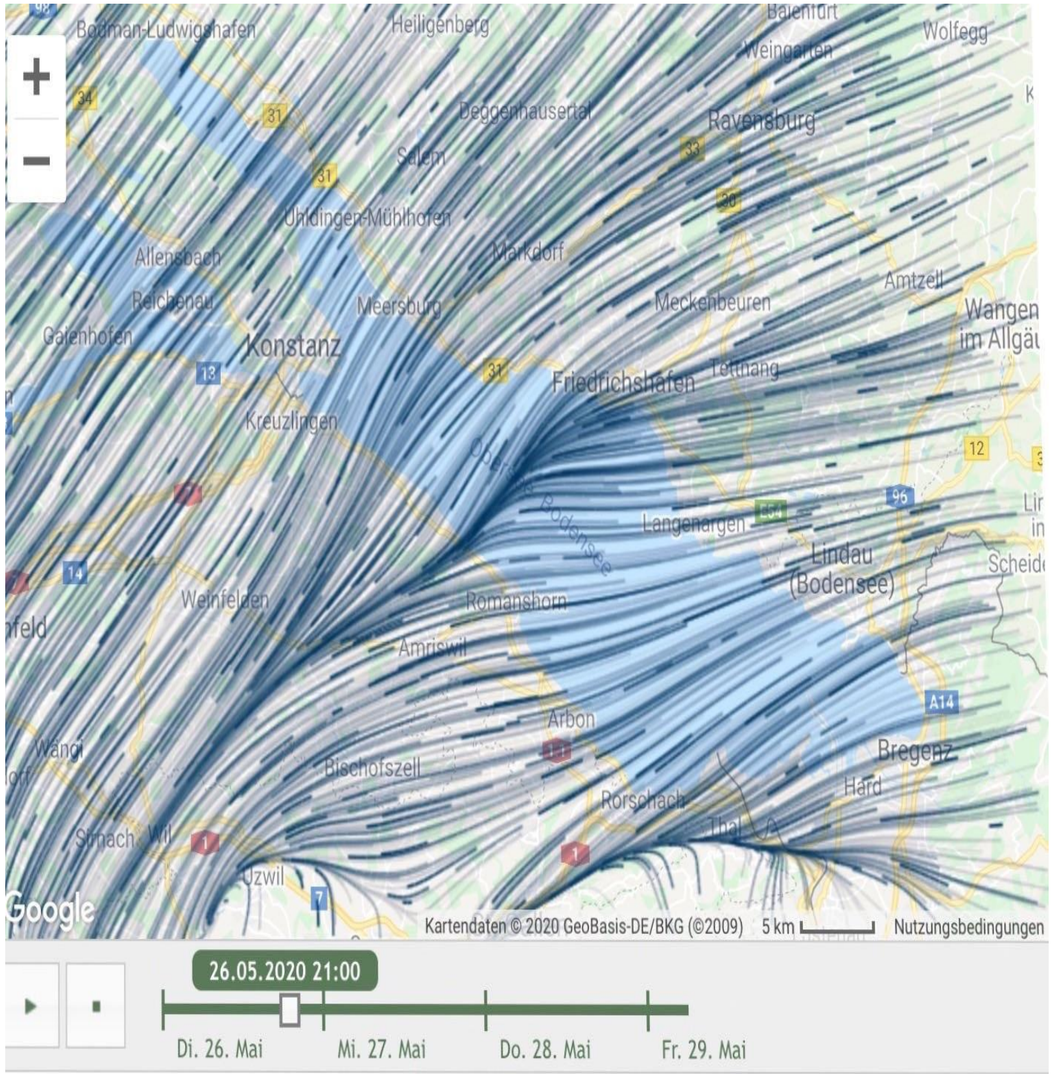


Fig 4.5 Steady

Fig 4.6 Unsteady

Fig 4.7 Pulsing

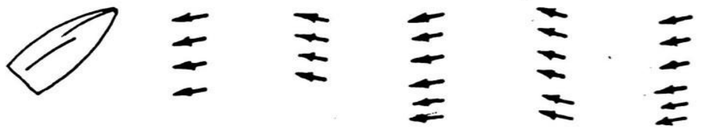


Fig 4.8 Oscillating

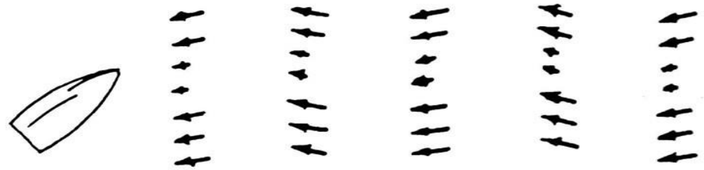
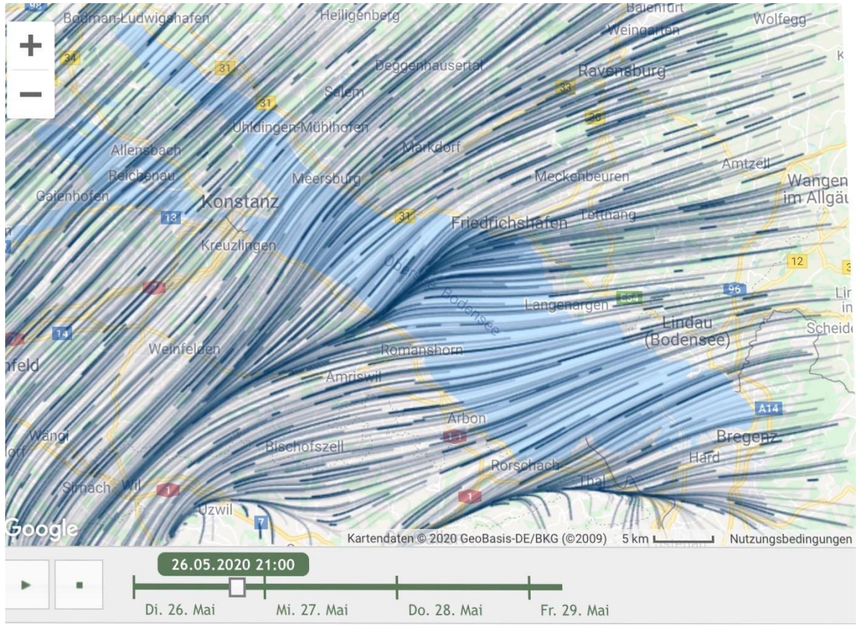
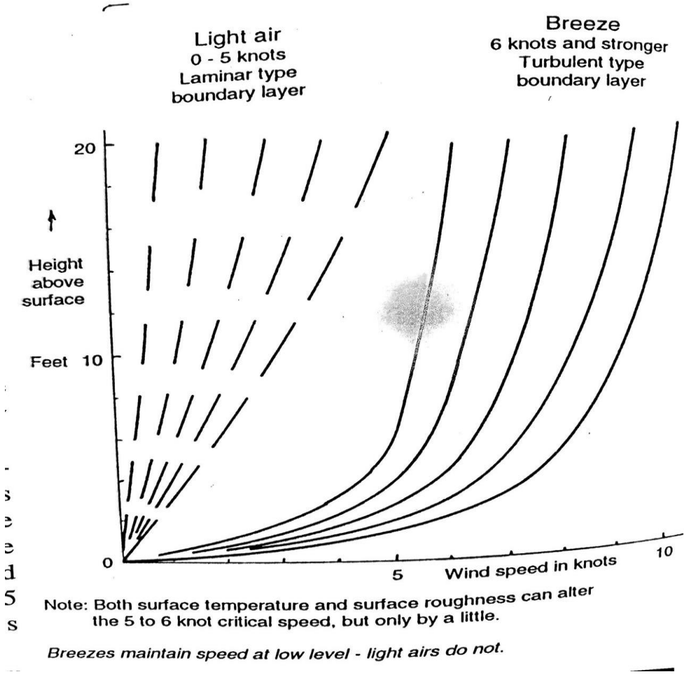


Fig 4.9 Ribboning

Arrow lengths indicate wind speed ← = 5 knots
Arrow directions suggests wind direction • = calm
Spacing of changes is typically 100 - 200 metres

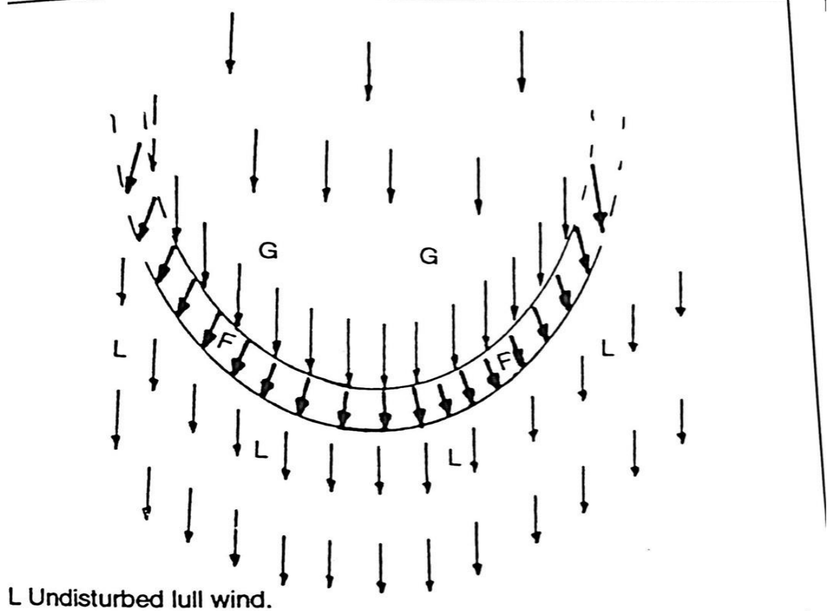




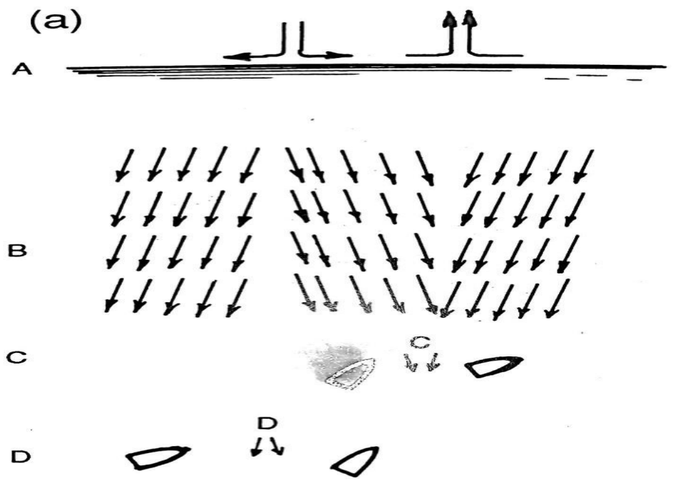
Note: Both surface temperature and surface roughness can alter the 5 to 6 knot critical speed, but only by a little.

Breezes maintain speed at low level - light airs do not.

Fig 5.12(b) The appearance of gusts from height

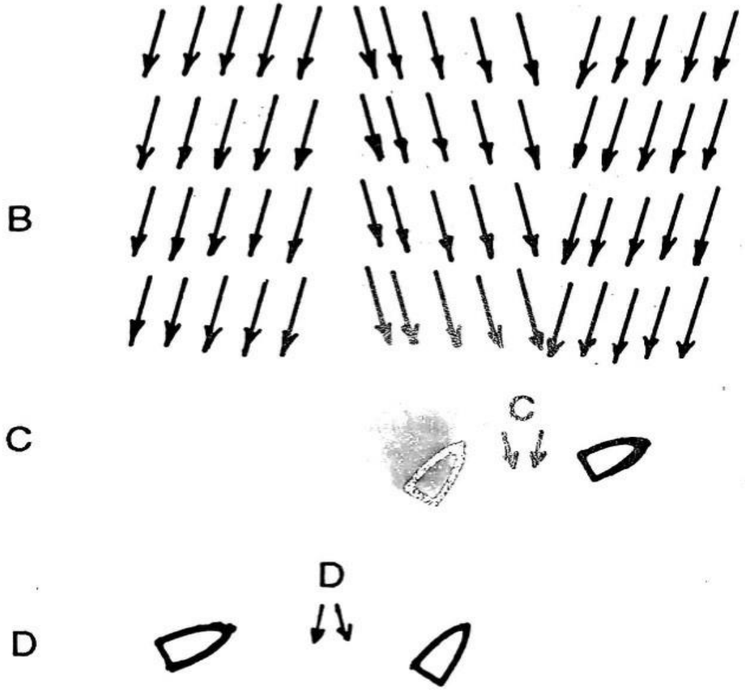


L Undisturbed lull wind.



Cross wind convergence/divergence due to heat. Mechanism: strong heating causes lines of rising and descending air.

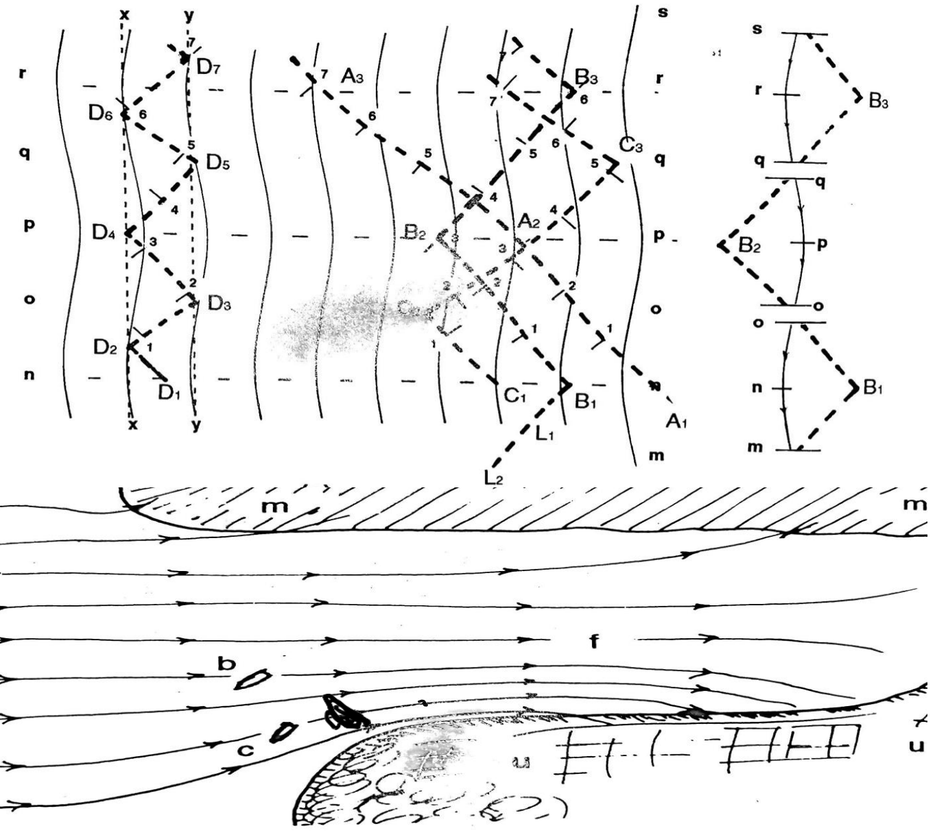
A = View looking upwind.



Cross wind convergence/divergence due to heat.
Mechanism: strong heating causes lines of rising and descending air.

A = View looking upwind.
B = View of surface flows from above.
C = Windward boat gains in convergent situation.
D = Leeward boat gains in divergent situation.

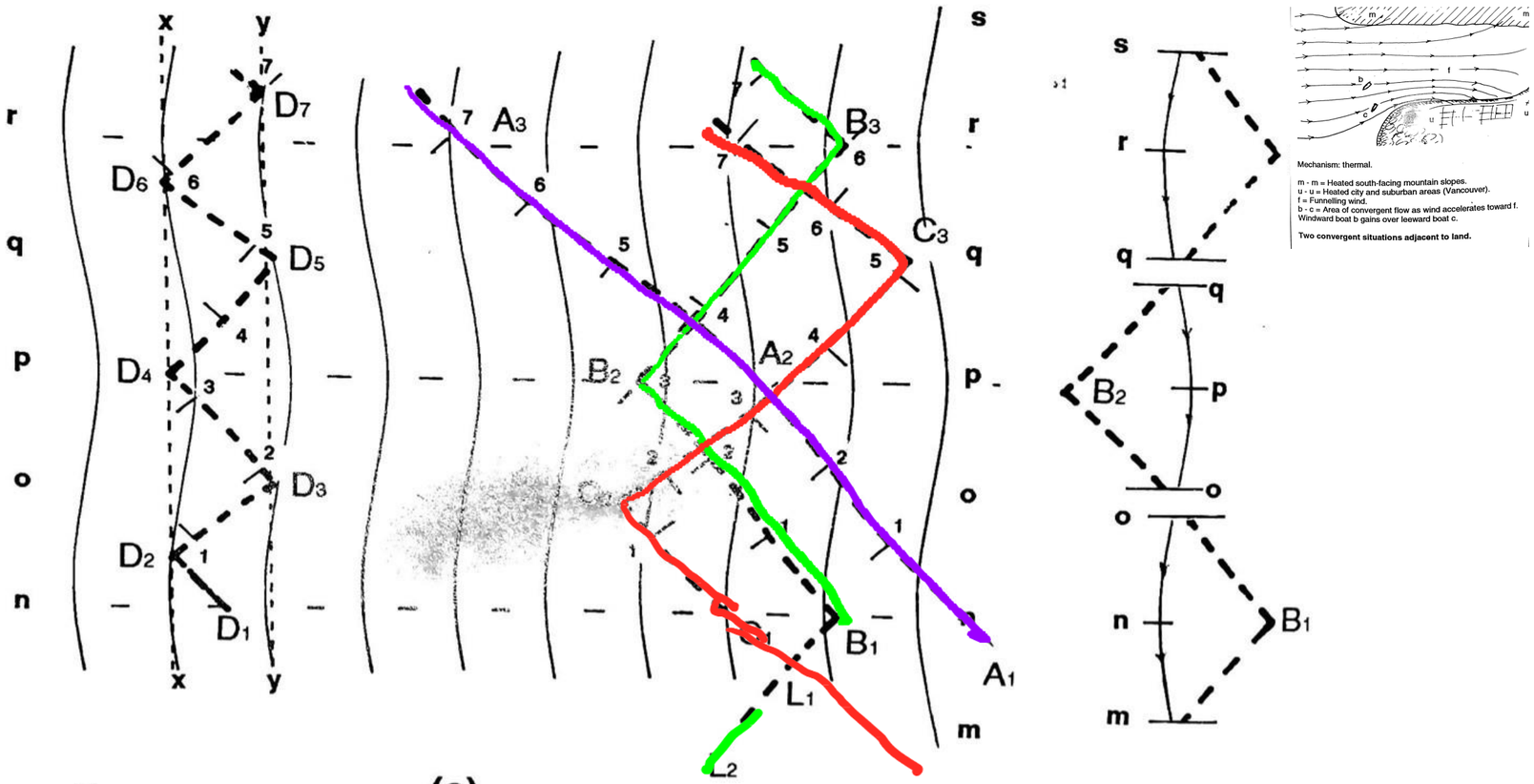
Two open-water convergent/divergent situations.



Mechanism: thermal.

m - m = Heated south-facing mountain slopes.
u - u = Heated city and suburban areas (Vancouver).
f = Funnelling wind.
b - c = Area of convergent flow as wind accelerates toward f.
Windward boat b gains over leeward boat c.

Two convergent situations adjacent to land.

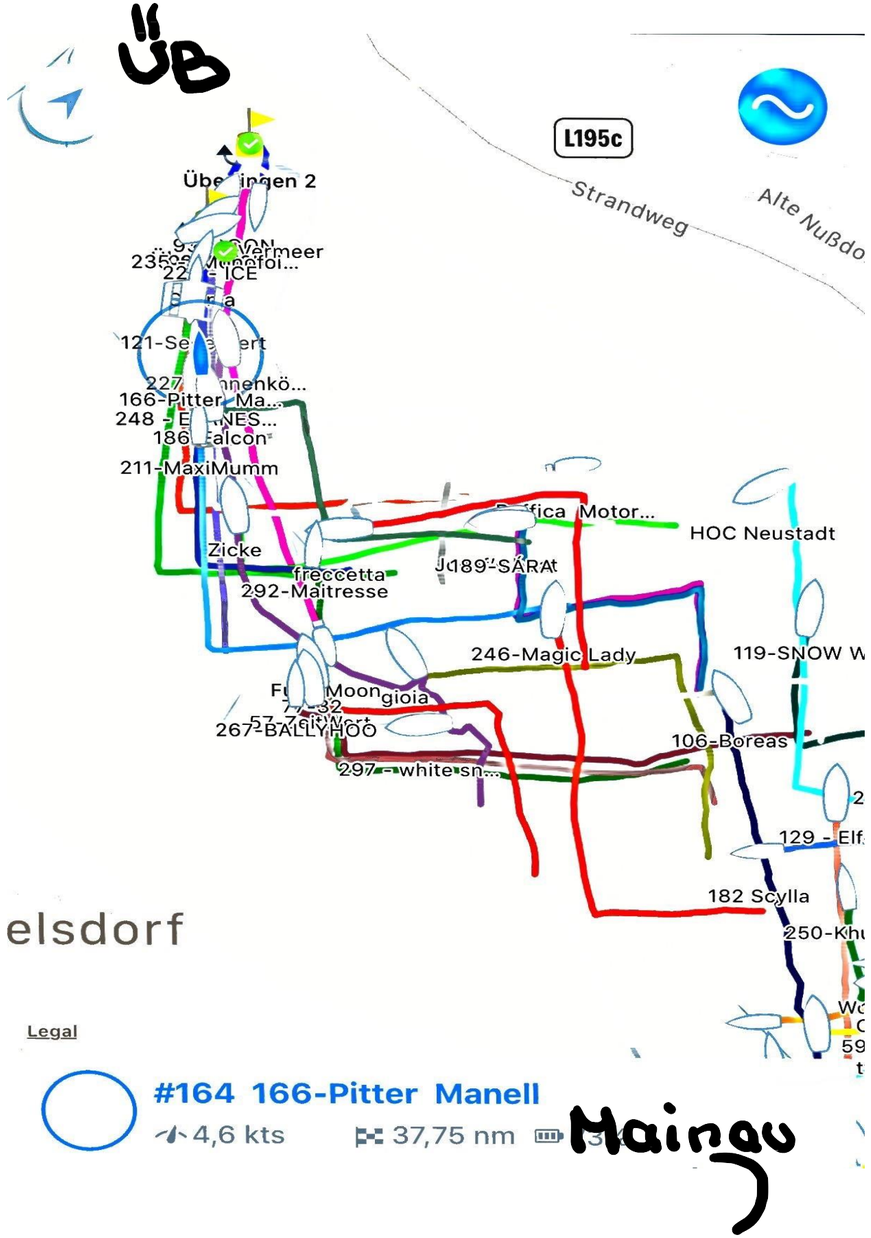


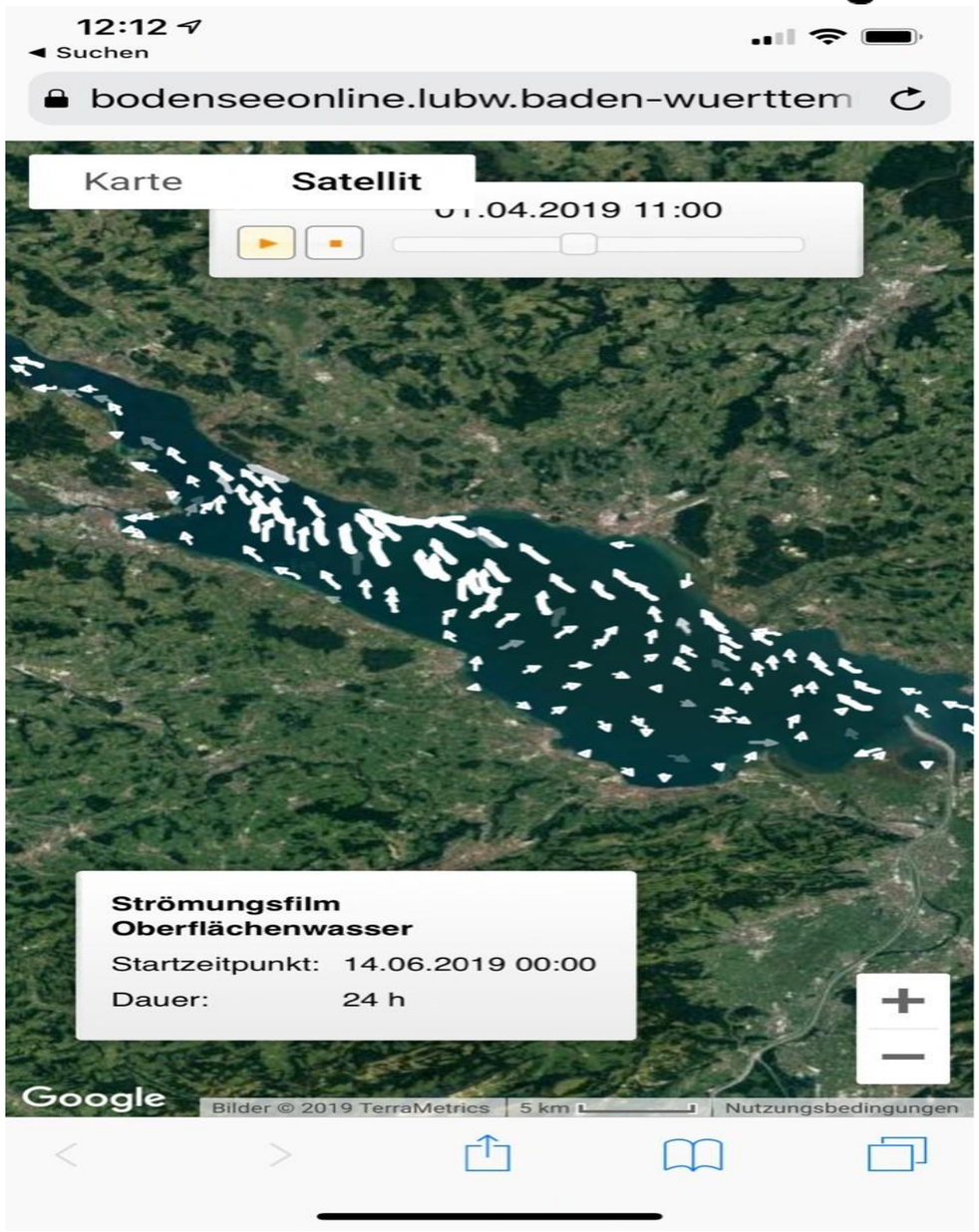
Mechanism: thermal.

m - m = Heated south-facing mountain slopes.
u - u = Heated city and suburban areas (Vancouver).
f = Funnelling wind.
b - c = Area of convergent flow as wind accelerates toward f. Windward boat b gains over leeward boat c.

Two convergent situations adjacent to land.

Fig 12.3 Full wave - minimum time and defensive techniques


L195c
Strandweg
Alte Nußdo
Übe ingen 2
Vermeer
ICE
121-Se ert
227 nenkö...
166-Pitter Ma...
248 NES...
186 Falcon
211-MaxiMumm
ica Motor...
HOC Neustadt
Zicke
freccetta
292-Maitresse
189-SARAt
246-Magic Lady
119-SNOW W
Moon gioia
267-BALLYHOO
106-Boreas
297 white sn...
129 - Elf
182 Scylla
250-Khu
elsdorf
Legal
#164 166-Pitter Manell
4,6 kts
37,75 nm


12:12
Suchen
bodenseeonline.lubw.baden-wuerttem
Karte
Satellit
01.04.2019 11:00
Strömungsfilm
Oberflächenwasser
Startzeitpunkt: 14.06.2019 00:00
Dauer: 24 h
Google
Bilder © 2019 TerraMetrics
5 km
Nutzungsbedingungen

STG

Windabweichung in Grad

Länge der Linie in Metern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
50	1.2	2.5	3.7	4.9	6.2	7.4	8.6	9.8	11.1	12.3	13.5	14.7	15.9	17.1	18.3	19.5	20.7	21.9	23.0	24.2	25.3	26.5	27.6	28.8	29.9
60	1.5	3.0	4.4	5.9	7.4	8.9	10.3	11.8	13.3	14.7	16.2	17.6	19.1	20.5	22.0	23.4	24.8	26.2	27.6	29.0	30.4	31.8	33.2	34.5	35.9
70	1.7	3.5	5.2	6.9	8.6	10.3	12.1	13.8	15.5	17.2	18.9	20.6	22.3	23.9	25.6	27.3	28.9	30.6	32.2	33.9	35.5	37.1	38.7	40.3	41.8
80	2.0	3.9	5.9	7.9	9.9	11.8	13.8	15.7	17.7	19.6	21.6	23.5	25.5	27.4	29.3	31.2	33.1	35.0	36.8	38.7	40.5	42.4	44.2	46.0	47.8
90	2.2	4.4	6.7	8.9	11.1	13.3	15.5	17.7	19.9	22.1	24.3	26.5	28.6	30.8	32.9	35.1	37.2	39.3	41.4	43.5	45.6	47.7	49.7	51.8	53.8
100	2.5	4.9	7.4	9.9	12.3	14.8	17.2	19.7	22.1	24.6	27.0	29.4	31.8	34.2	36.6	39.0	41.3	43.7	46.0	48.4	50.7	53.0	55.3	57.5	59.8
110	2.7	5.4	8.1	10.9	13.6	16.3	19.0	21.7	24.3	[illegible]	29.7	32.3	35.0	37.6	40.3	42.9	45.5	48.1	50.6	53.2	55.7	58.3	60.8	63.3	65.7
120	3.0	5.9	8.9	11.8	14.8	17.7	20.7	23.6	26.5	29.5	32.4	35.3	38.2	41.1	43.9	46.8	49.6	52.4	55.3	58.0	60.8	63.6	66.3	69.0	71.7
130	3.2	6.4	9.6	12.8	16.0	19.2	22.4	25.6	28.8	31.9	35.1	38.2	41.4	44.5	47.6	50.7	53.8	56.8	59.9	62.9	65.9	68.9	71.8	74.8	77.7
140	3.5	6.9	10.4	13.8	17.3	20.7	24.1	27.6	31.0	34.4	37.8	41.2	44.5	47.9	51.2	54.6	57.9	61.2	64.5	67.7	71.0	74.2	77.4	80.5	83.7
150	3.7	7.4	11.1	14.8	18.5	22.2	25.9	29.5	33.2	36.8	40.5	44.1	47.7	51.3	54.9	58.5	62.0	65.6	69.1	72.6	76.0	79.5	82.9	86.3	89.7
160	3.9	7.9	11.8	15.8	19.7	23.7	27.6	31.5	35.4	39.3	43.2	47.0	50.9	54.7	58.6	62.4	66.2	69.9	73.7	77.4	81.1	84.8	88.4	92.0	95.6
170	4.2	8.4	12.6	16.8	21.0	25.1	29.3	33.5	37.6	41.7	45.9	50.0	54.1	58.2	62.2	66.3	70.3	74.3	78.3	82.2	86.2	90.1	93.9	97.8	101.6
180	4.4	8.9	13.3	17.8	22.2	26.6	31.0	35.4	39.8	44.2	48.6	52.9	57.3	61.6	65.9	70.2	74.4	78.7	82.9	87.1	91.2	95.4	99.5	103.5	107.6
190	4.7	9.4	14.1	18.7	23.4	28.1	32.7	37.4	42.0	46.7	51.3	55.9	60.4	65.0	69.5	74.1	78.6	83.0	87.5	91.9	96.3	100.7	105.0	109.3	113.6
200	4.9	9.9	14.8	19.7	24.7	29.6	34.5	39.4	44.2	49.1	54.0	58.8	63.6	68.4	73.2	78.0	82.7	87.4	92.1	96.7	101.4	106.0	110.5	115.0	119.5
210	5.2	10.4	15.5	20.7	25.9	31.0	36.2	41.3	46.5	51.6	56.7	61.7	66.8	71.8	76.9	81.9	86.8	91.8	96.7	101.6	106.4	111.3	116.0	120.8	125.5
220	5.4	10.9	16.3	21.7	27.1	32.5	37.9	43.3	48.7	54.0	59.4	64.7	70.0	75.3	80.5	85.8	91.0	96.1	101.3	106.4	111.5	116.6	121.6	126.5	131.5
230	5.7	11.4	17.0	22.7	28.3	34.0	39.6	45.3	50.9	56.5	62.1	67.6	73.2	78.7	84.2	89.7	95.1	100.5	105.9	111.2	116.6	121.8	127.1	132.3	137.5
240	5.9	11.8	17.8	23.7	29.6	35.5	41.4	47.2	53.1	58.9	64.8	70.6	76.4	82.1	87.8	93.6	99.2	104.9	110.5	116.1	121.8	127.1	132.6	138.1	143.4
250	6.2	12.3	18.5	24.7	30.8	37.0	43.1	49.2	55.3	61.4	67.5	73.5	79.5	85.5	91.5	97.5	103.4	109.3	115.1	120.9	126.7	132.4	138.1	143.8	149.4
260	6.4	12.8	19.2	25.6	32.0	38.4	44.8	51.2	57.5	63.8	70.2	76.4	82.7	89.0	95.2	101.4	107.5	113.6	119.7	125.8	131.8	137.7	143.7	149.6	155.4
270	6.7	13.3	20.0	26.6	33.3	39.9	46.5	53.1	59.7	66.3	72.9	79.4	85.9	92.4	98.8	105.2	111.6	118.0	124.3	130.6	136.8	143.0	149.2	155.3	161.4
280	6.9	13.8	20.7	27.6	34.5	41.4	48.3	55.1	61.9	68.8	75.6	82.3	89.1	95.8	102.5	109.1	115.8	122.4	128.9	135.4	141.9	148.3	154.7	161.1	167.3
290	7.2	14.3	21.5	28.6	35.7	42.9	50.0	57.1	64.2	71.2	78.3	85.3	92.3	99.2	106.1	113.0	119.9	126.7	133.5	140.3	147.0	153.6	160.2	166.8	173.3
300	7.4	14.8	22.2	29.6	37.0	44.3	51.7	59.0	66.4	73.7	81.0	88.2	95.4	102.6	109.8	116.9	124.0	131.1	138.1	145.1	152.0	158.9	165.8	172.6	179.3
310	7.7	15.3	22.9	30.6	38.2	45.8	53.4	61.0	68.6	76.1	83.7	91.1	98.6	106.1	113.5	120.8	128.2	135.5	142.7	149.9	157.1	164.2	171.3	178.3	185.3
320	7.9	15.8	23.7	31.6	39.4	47.3	55.2	63.0	70.8	78.6	86.4	94.1	101.8	109.5	117.1	124.7	132.3	139.8	147.3	154.8	162.2	169.5	176.8	184.1	191.3
330	8.1	16.3	24.4	32.6	40.7	48.8	56.9	65.0	73.0	81.0	89.0	97.0	105.0	112.9	120.8	128.6	136.4	144.2	151.9	159.6	167.2	174.8	182.4	189.8	197.2
340	8.4	16.8	25.2	33.5	41.9	50.3	58.6	66.9	75.2	83.5	91.7	100.0	108.2	116.3	124.4	132.5	140.6	148.6	156.5	164.5	172.3	180.1	187.9	195.6	203.2
350	8.6	17.3	25.9	34.5	43.1	51.7	60.3	68.9	77.4	86.0	94.4	102.9	111.3	119.7	128.1	136.4	144.7	153.0	161.1	169.3	177.4	185.4	193.4	201.3	209.2
360	8.9	17.8	26.6	35.5	44.4	53.2	62.0	70.9	79.6	88.4	97.1	105.9	114.5	123.2	131.8	140.3	148.9	157.3	165.8	174.1	182.5	190.7	198.9	207.1	215.2
370	9.1	18.3	27.4	36.5	45.6	54.7	63.8	72.8	81.9	90.9	99.8	108.8	117.7	126.6	135.4	144.2	153.0	161.7	170.4	179.0	187.5	196.0	204.5	212.8	221.1
380	9.4	18.8	28.1	37.5	46.8	56.2	65.5	74.8	84.1	93.3	102.5	111.7	120.9	130.0	139.1	148.1	157.1	166.1	175.0	183.8	192.6	201.3	210.0	218.6	227.1
390	9.6	19.2	28.9	38.5	48.1	57.7	67.2	76.8	86.3	95.8	105.2	114.7	124.1	133.4	142.7	152.0	161.3	170.4	179.6	188.6	197.7	206.6	215.5	224.3	233.1
400	9.9	19.7	29.6	39.5	49.3	59.1	68.9	78.7	88.5	98.2	107.9	117.6	127.3	136.9	146.4	155.9	165.4	174.8	184.2	193.5	202.7	211.9	221.0	230.1	239.1

SAP

Vielen Dank!

Thomas