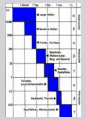
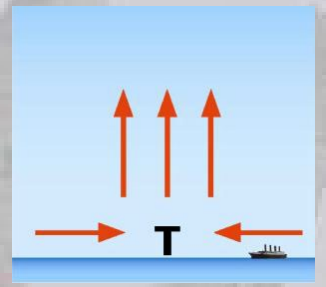
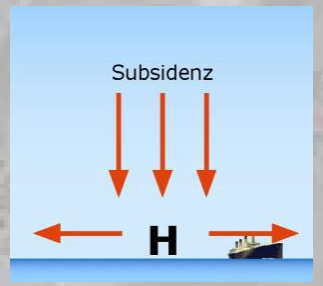
GROSSWETTERLAGEN

'Grosswetterlage' has been adopted in the English language as a German terminus technicus * It can be defined as 'typical weather situation, lasting for a few days at least'

Classification by space-time-scale  **with consequences for the**  **airmass characteristics**

Wind direction		**N-**	**E-**	**S-**	**W-**	
respectively		**NE-**	**SE-**	**SW-**	**NW-**	**General Weather Situation**
each		**cyclonic**		**anti-cyclonic**		**is a site-specific designation, i.e.**





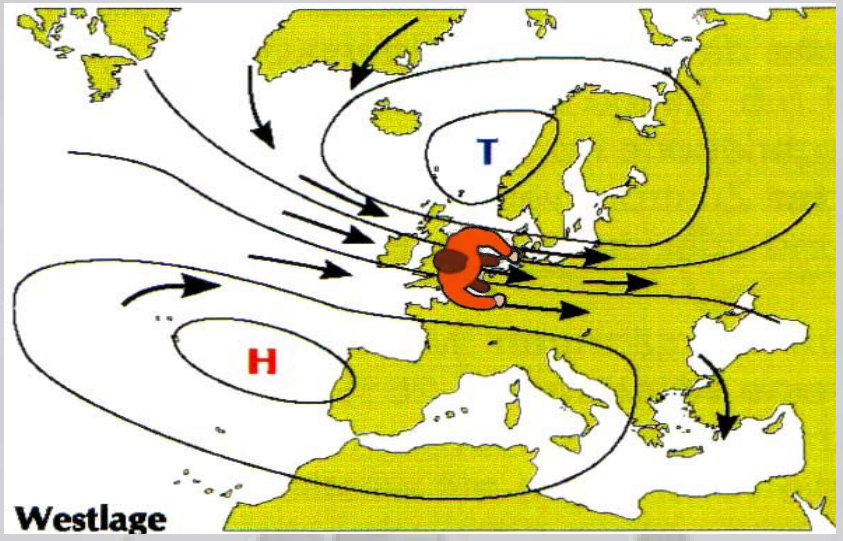
SWz for Berlin can be @same time
NWz for Hamburg and
NEz for Copenhagen

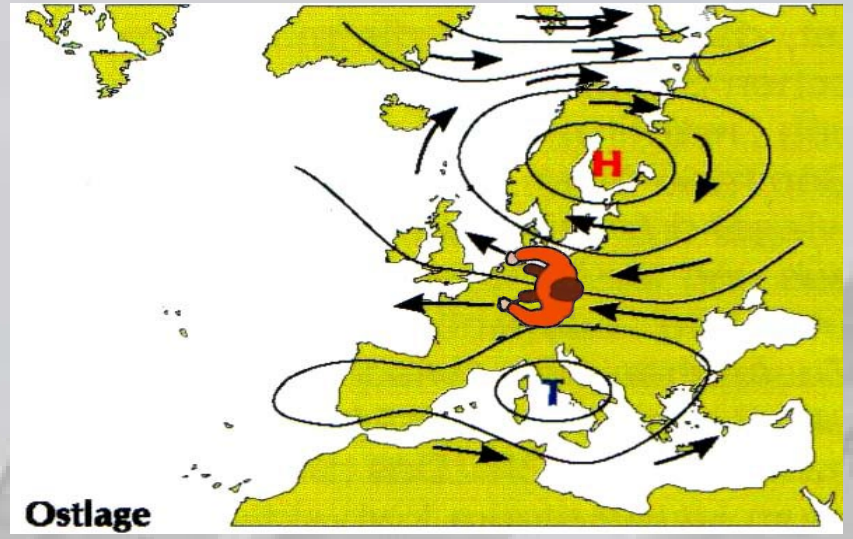
Surface convergence
clouds forming
PROB-RR ~> 50%

Surface divergence
clouds dissolving
PROB-RR ~< 50%

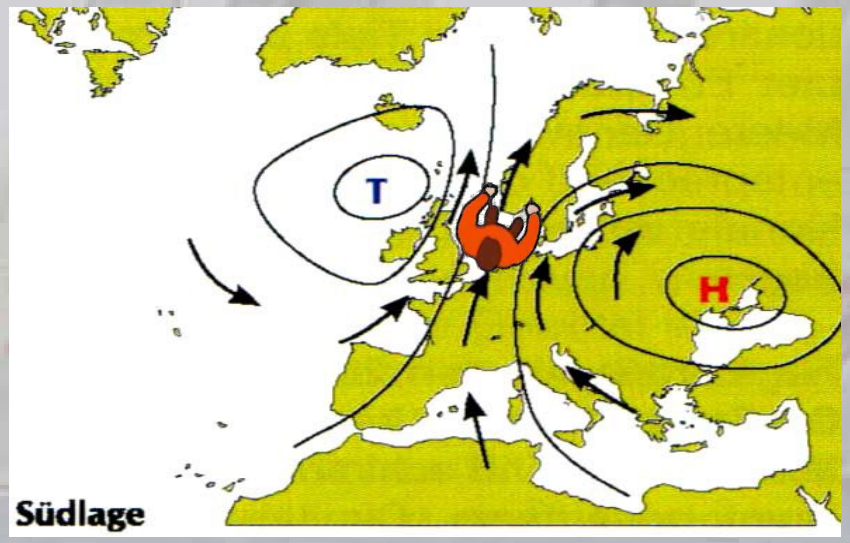
and	**TME**	**Low**	**Central Europe**	**TBI**	**Low**	**British Isles**
	HME	**High**	**Central Europe**	**HNF**	**High**	**Northsea Scandinavia**

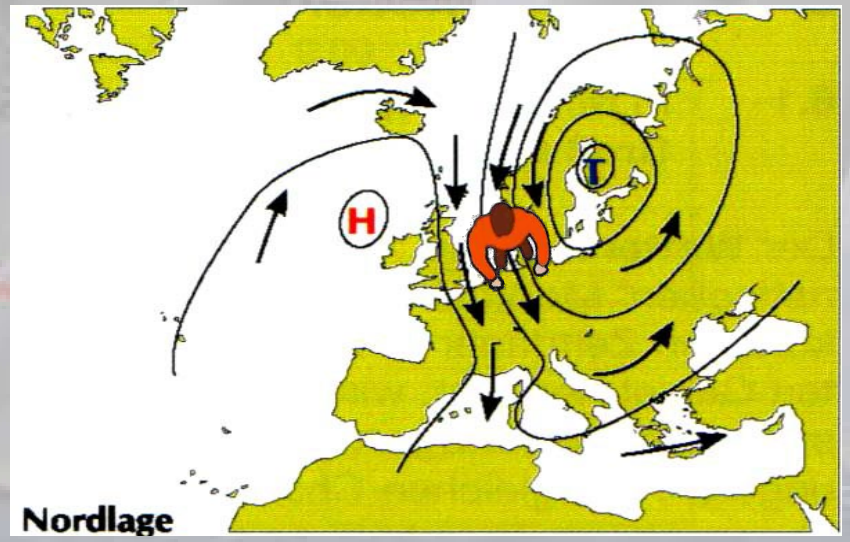
GROSSWETTERLAGEN (BUYS BALLOT'S LAW)



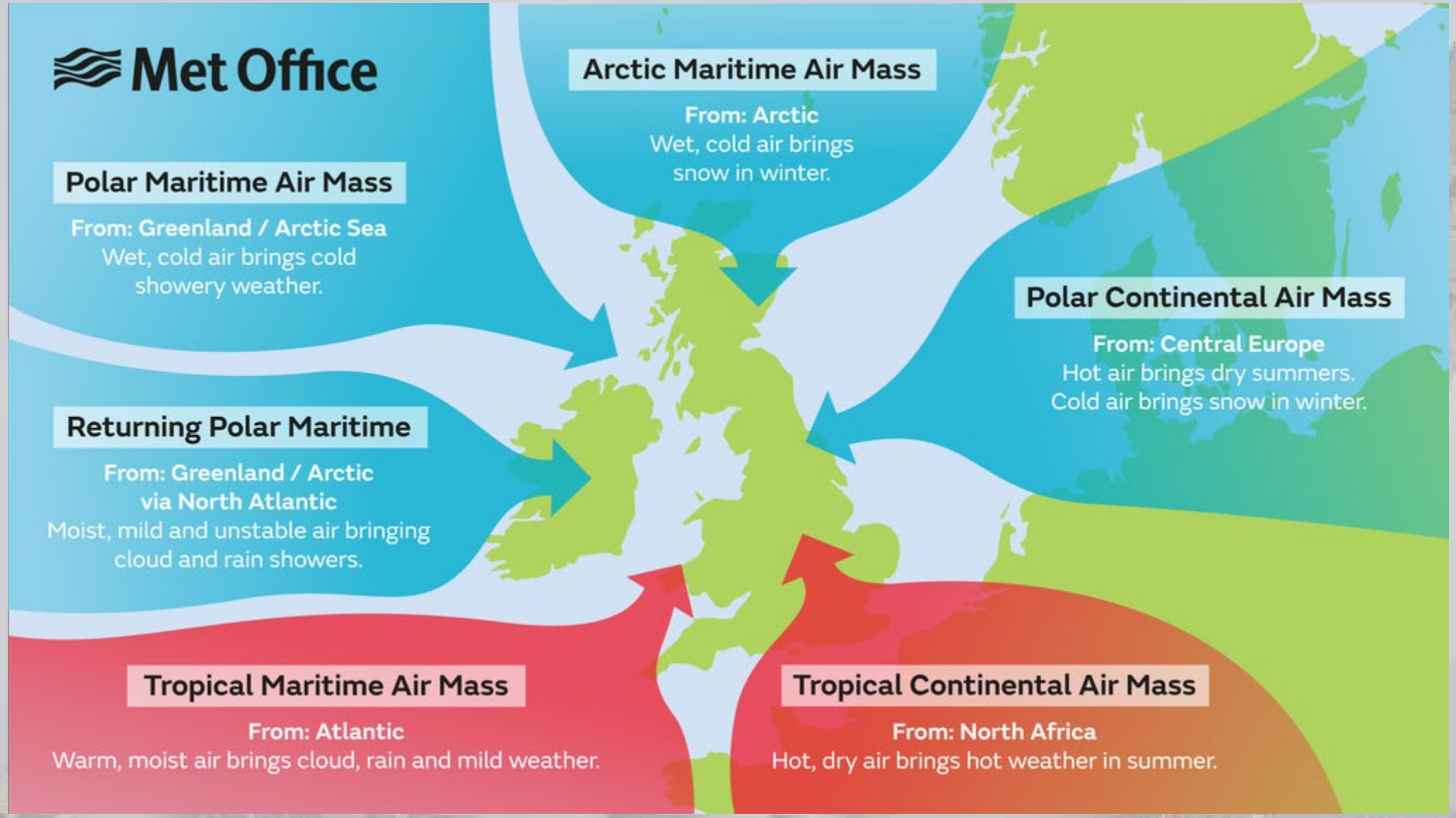


Wind from behind – Low to the left, High to the right

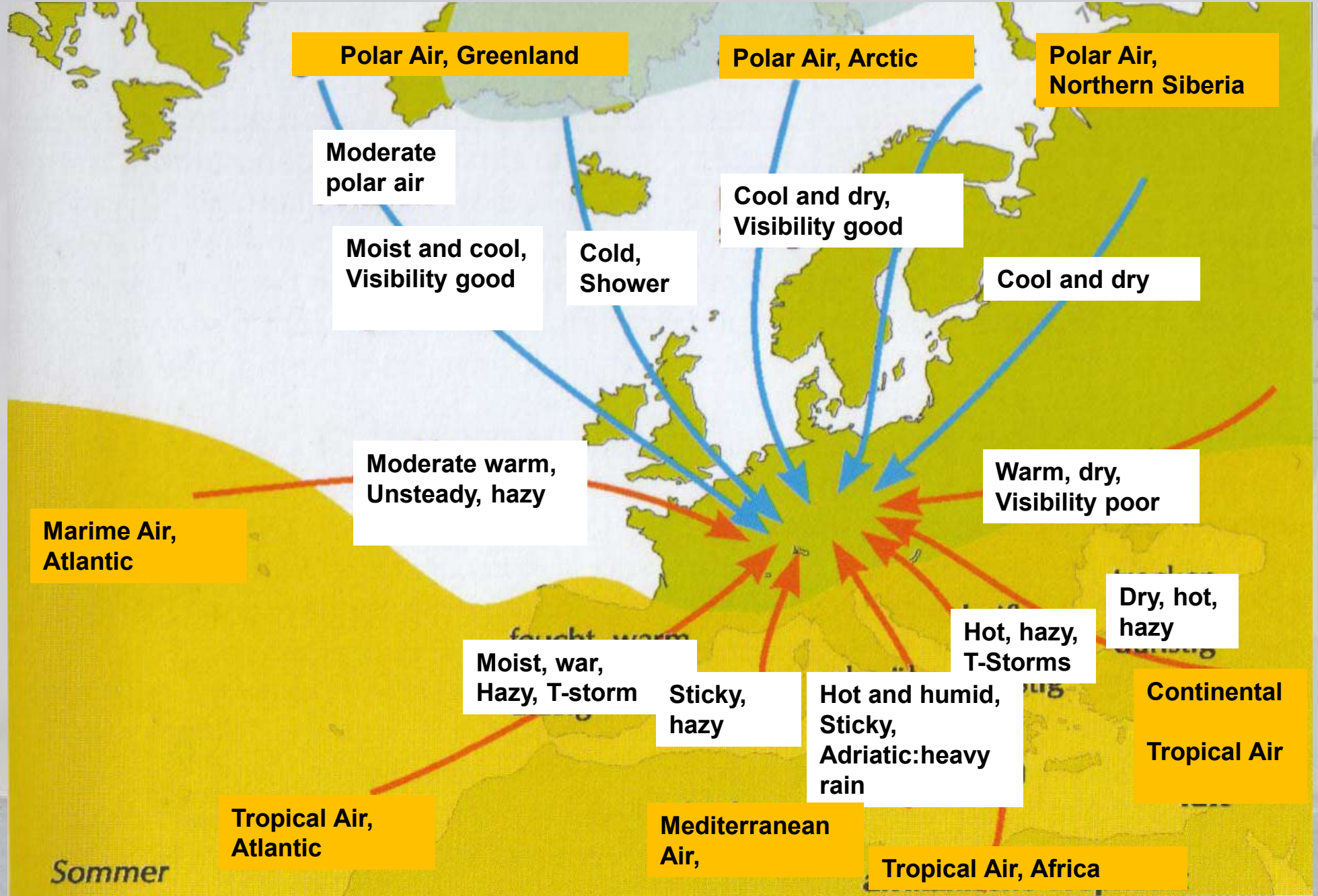




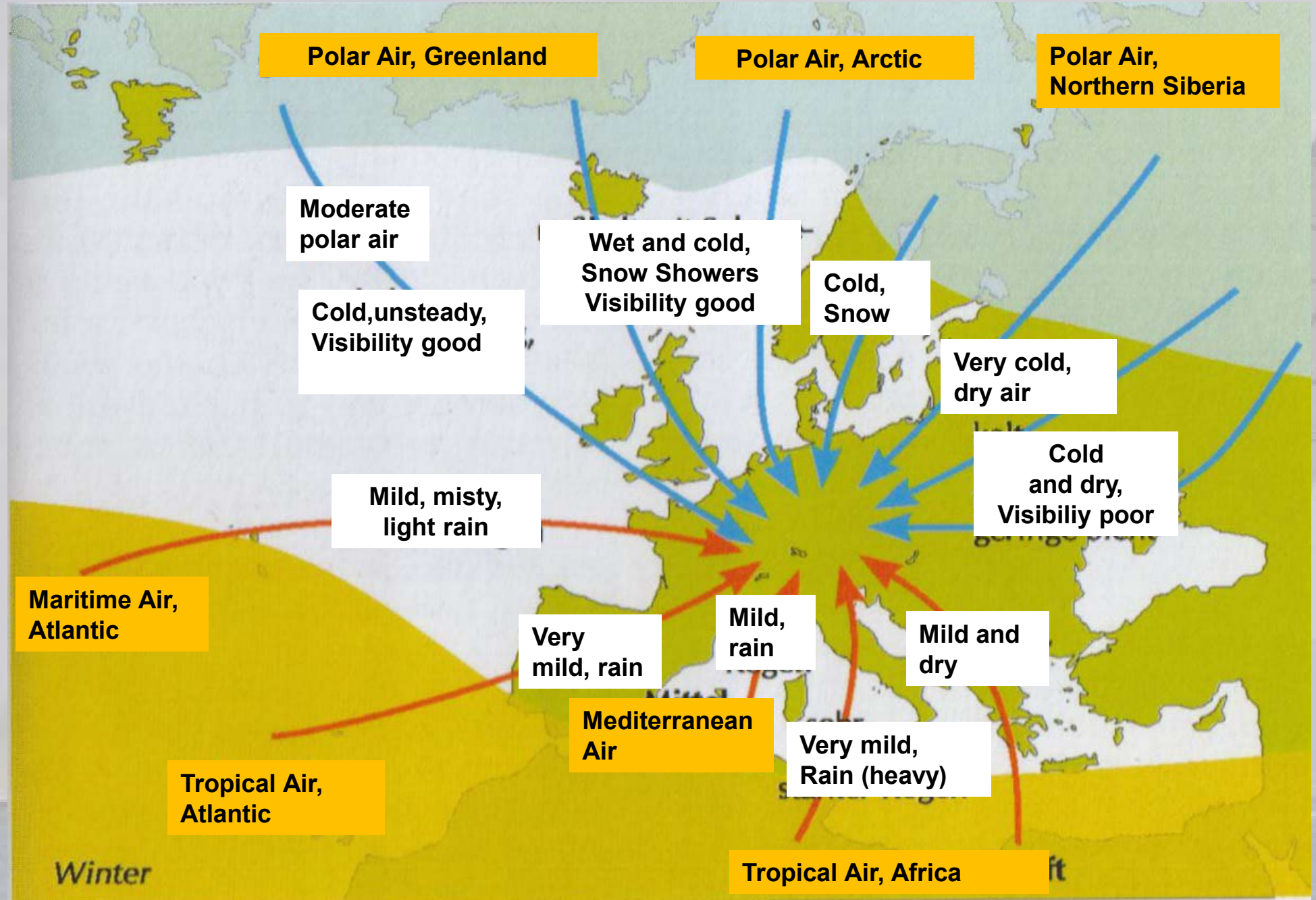
AIRMASS CHARACTERISTICS

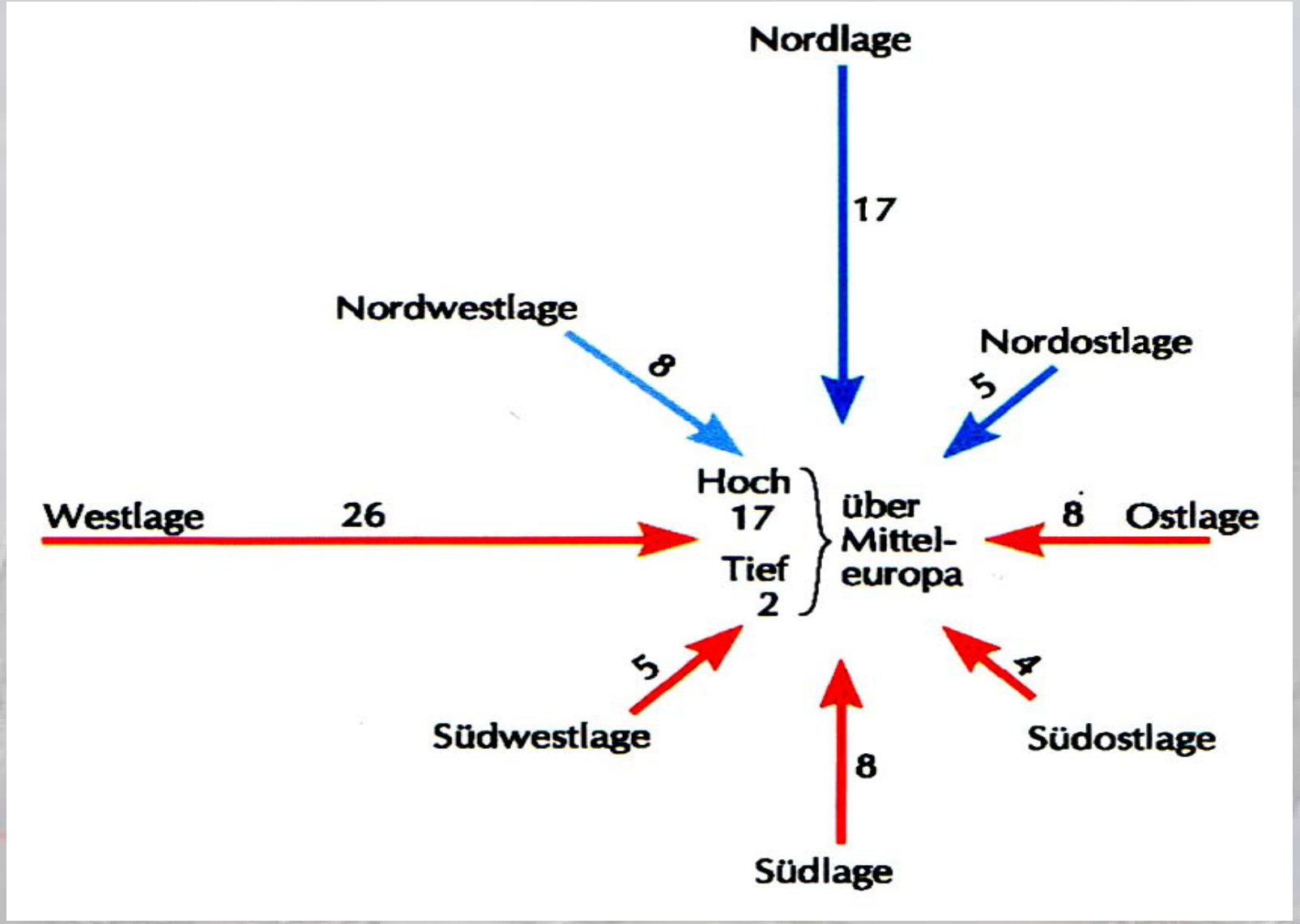


AIRMASS CHARACTERISTICS SUMMER

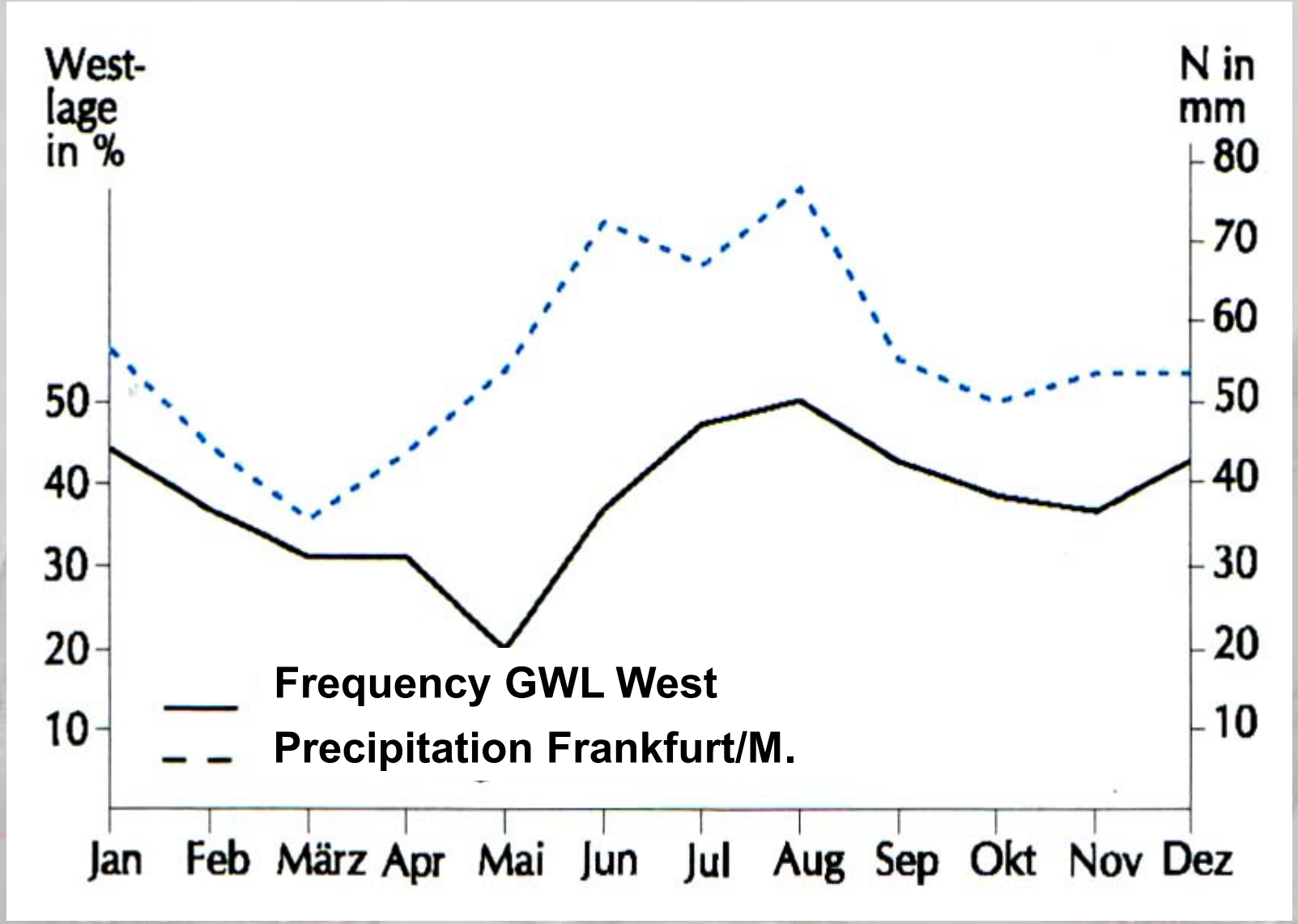


AIRMASS CHARACTERISTICS WINTER





Frequency distribution / % Grosswetterlagen Europe



Annual variation of GWL West and Precipitation in Frankfurt

OTHER TYPICAL WEATHER SITUATIONS

Omega Situation

- Blocking Anticyclone, warm core, stable (high geopotential in the upper air)
- Stabilisation due to warm air advection from the west into the ridge
- High pressure weather with risk of draught (summer) or extreme cold (winter)
- In the vicinity of lows risk of heavy precipitation or snowfall
- Typical duration a week or longer

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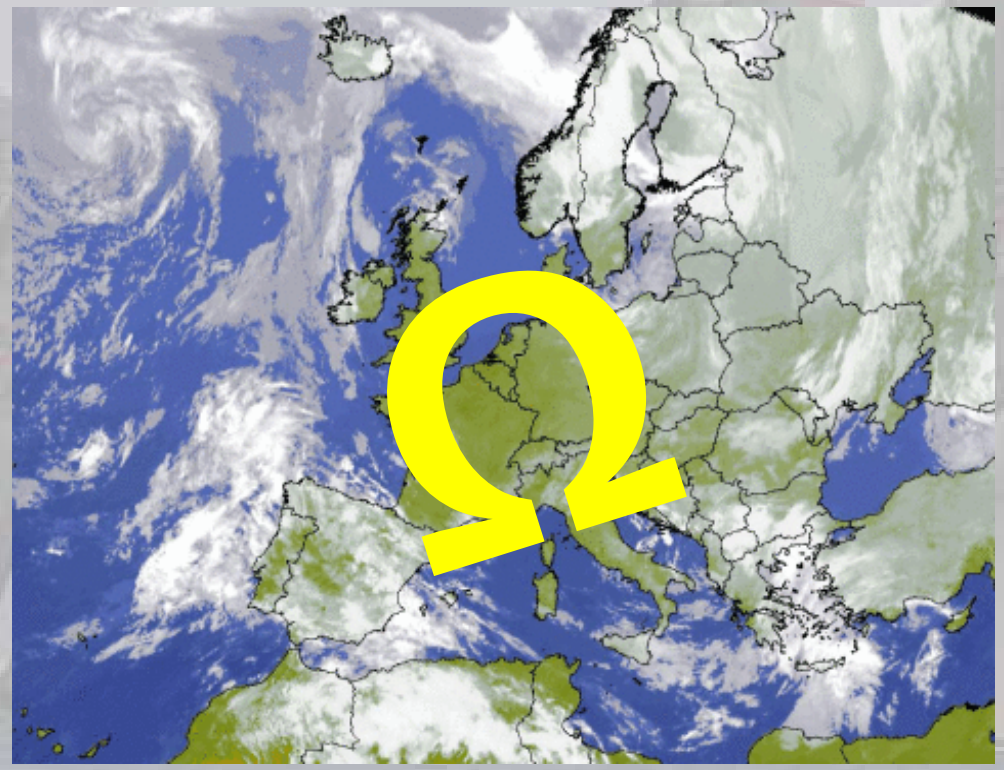

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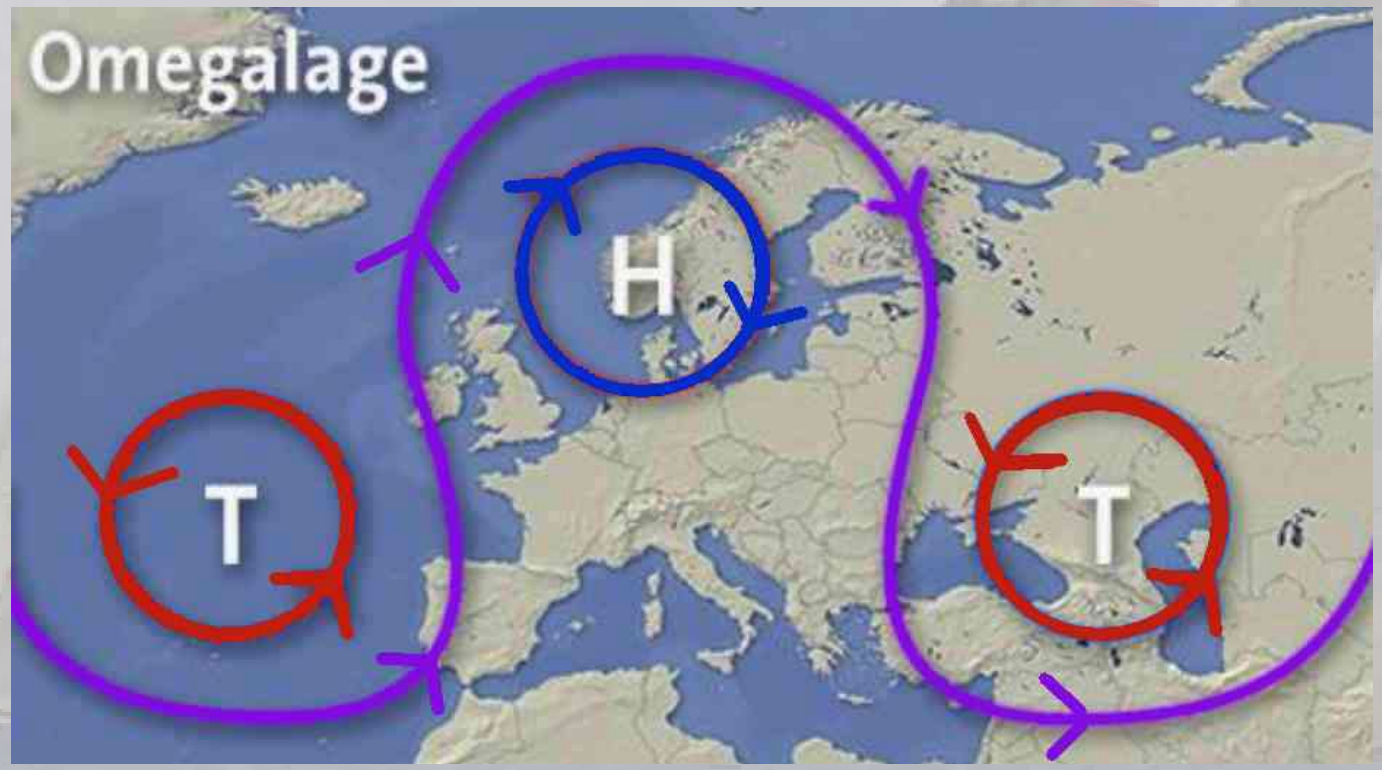
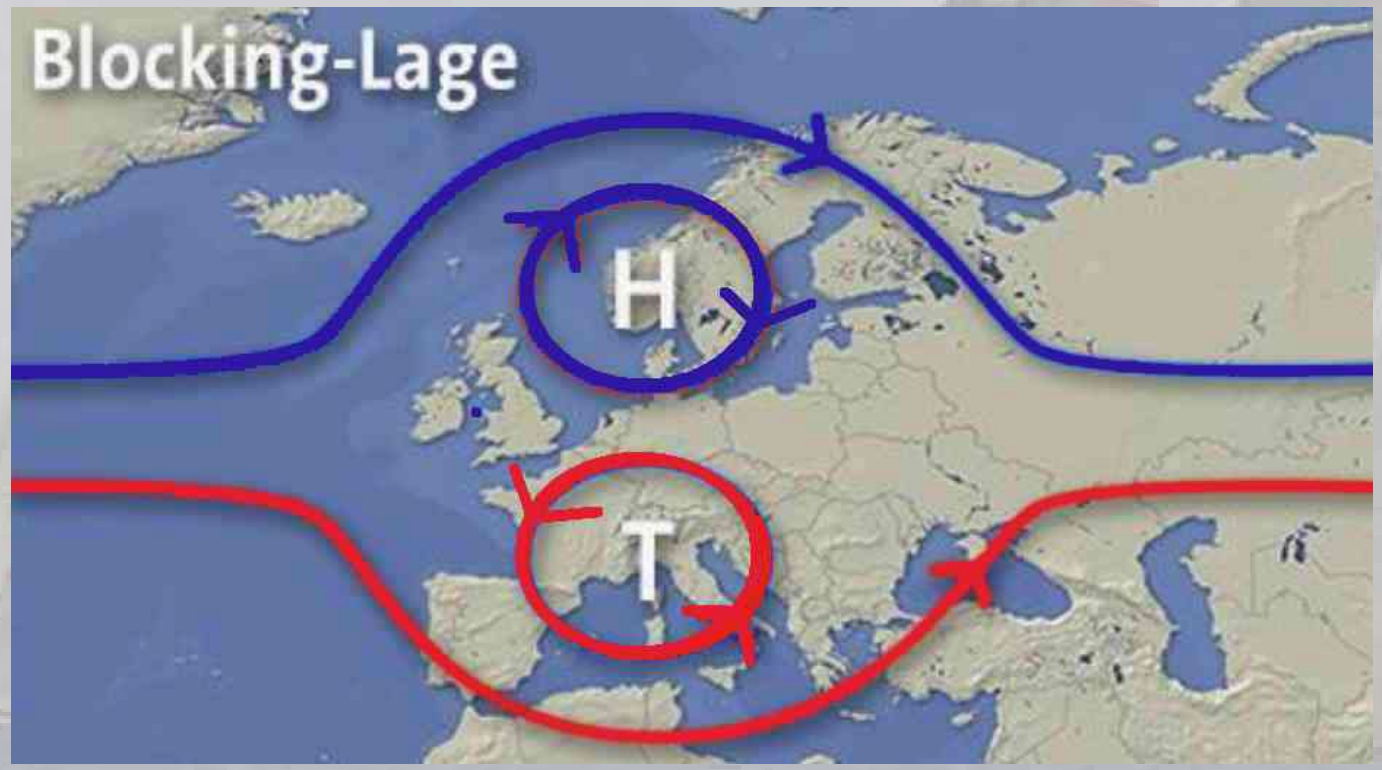
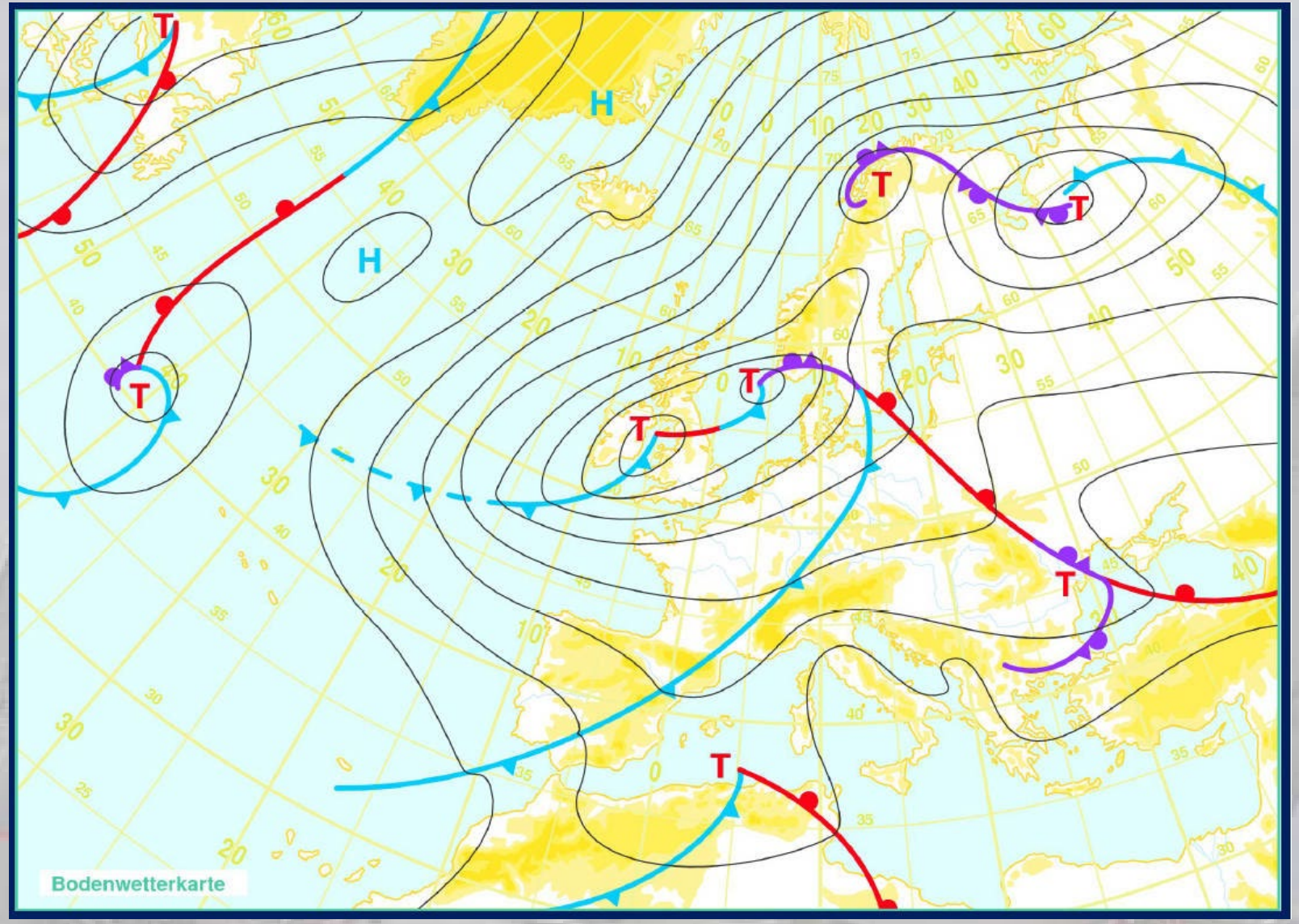


OTHER TYPICAL WEATHER SITUATIONS

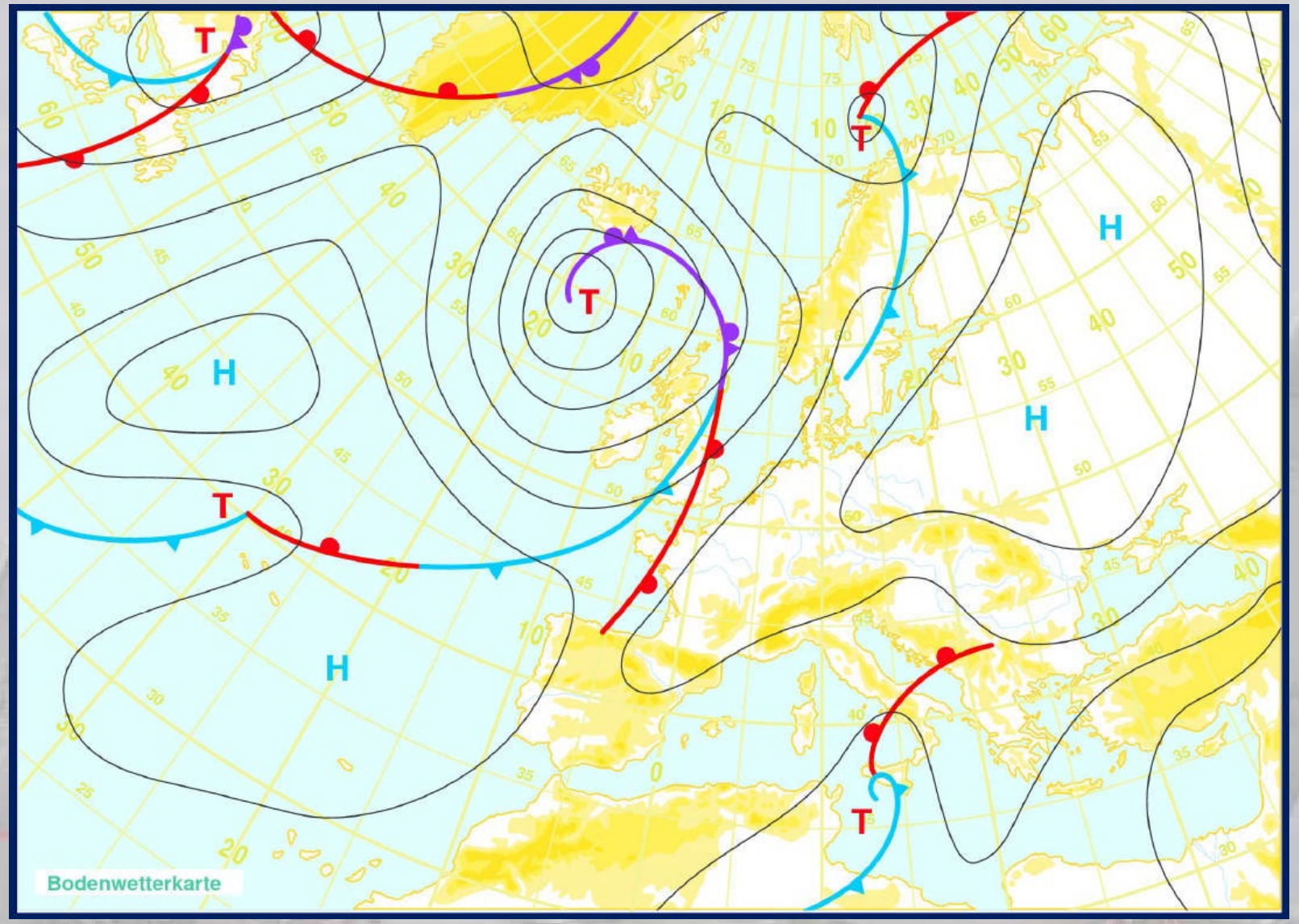
Blocking situation or High-over-Low

- Grosswetterlage East
- Splitting of jetstream into a northern and southern branch
- Instead of the Iceland Low there is a High
- Instead of the Acores High there is a Low
- Climatological highest probability in spring

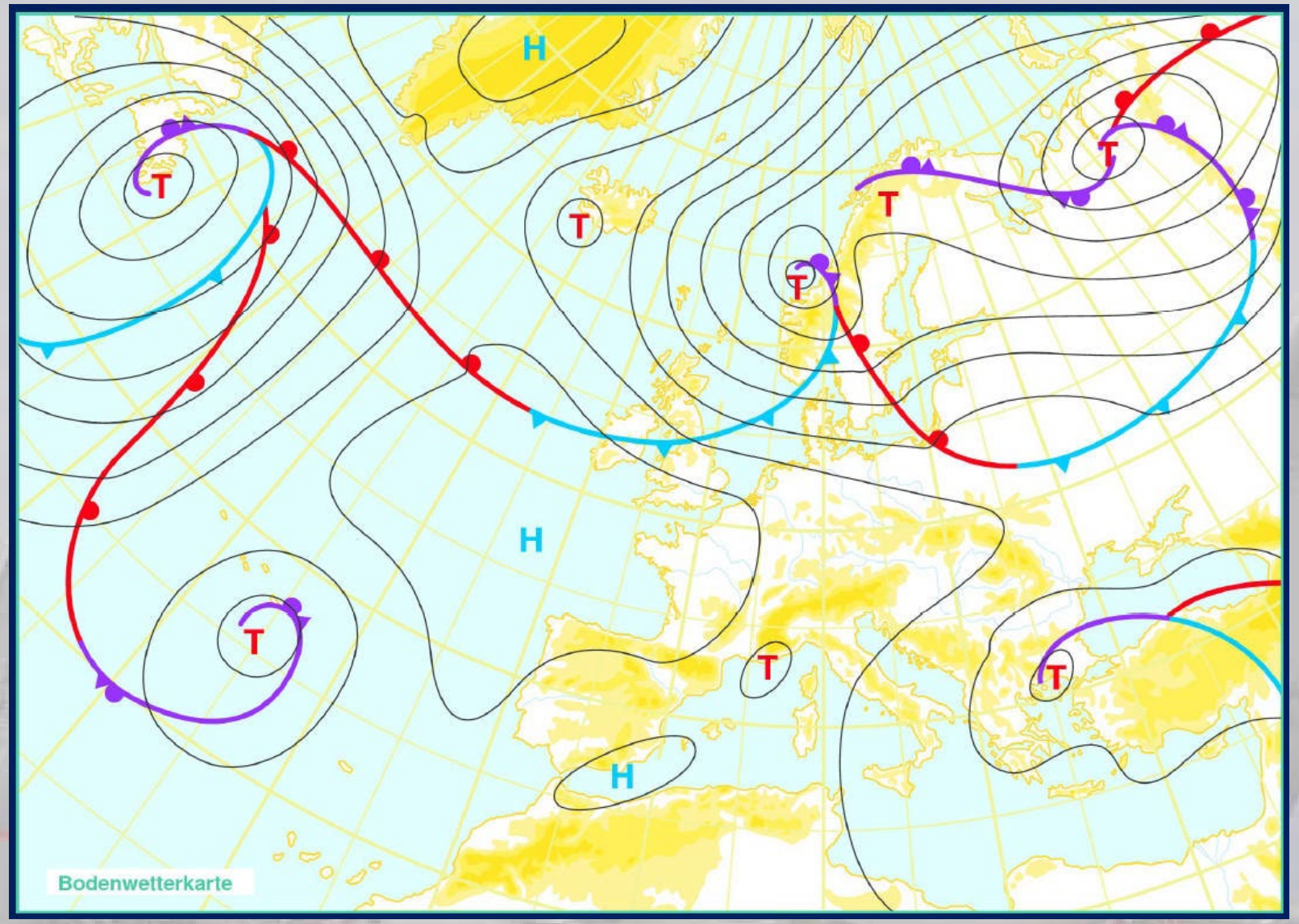




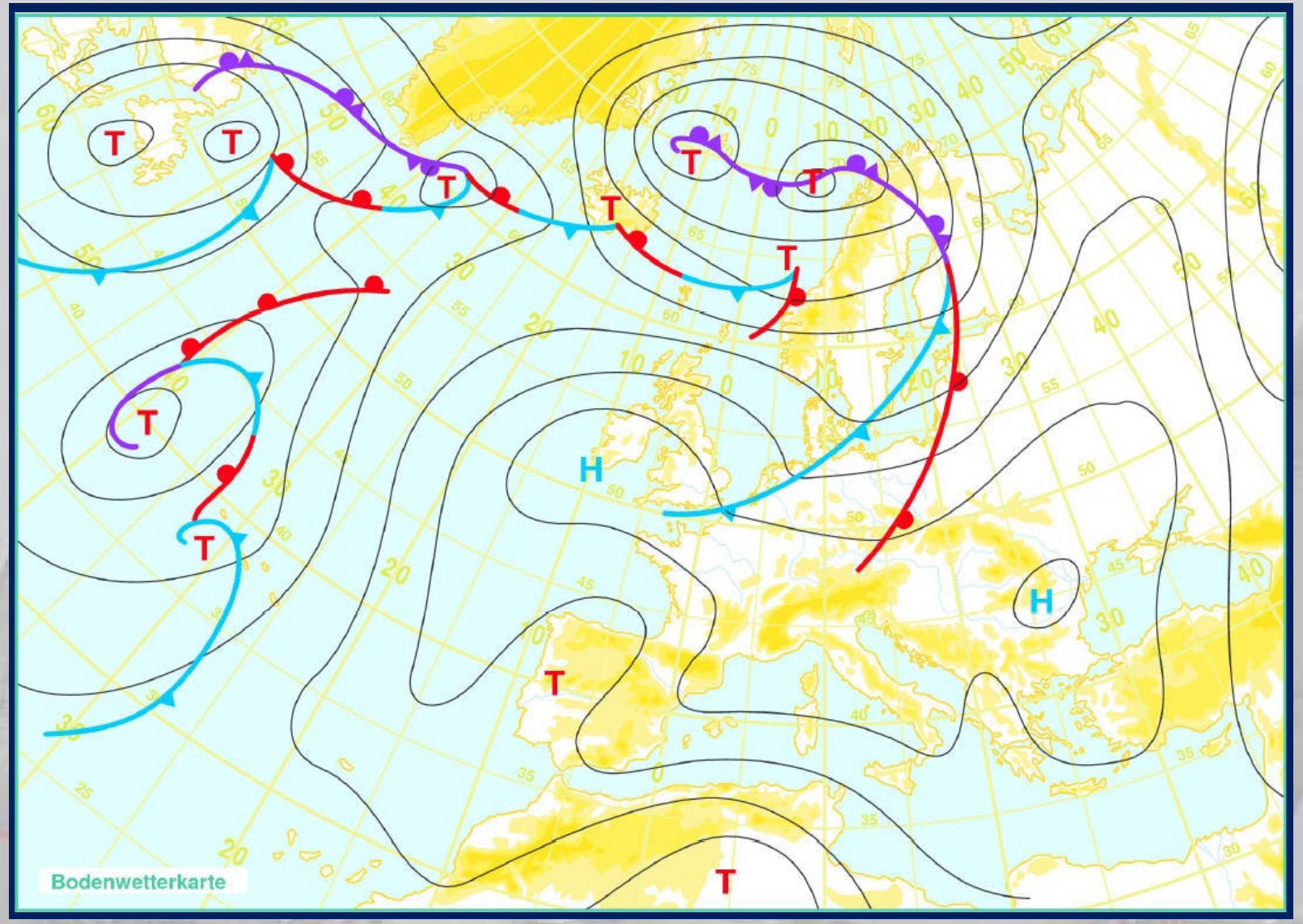
Southwest cyclonic



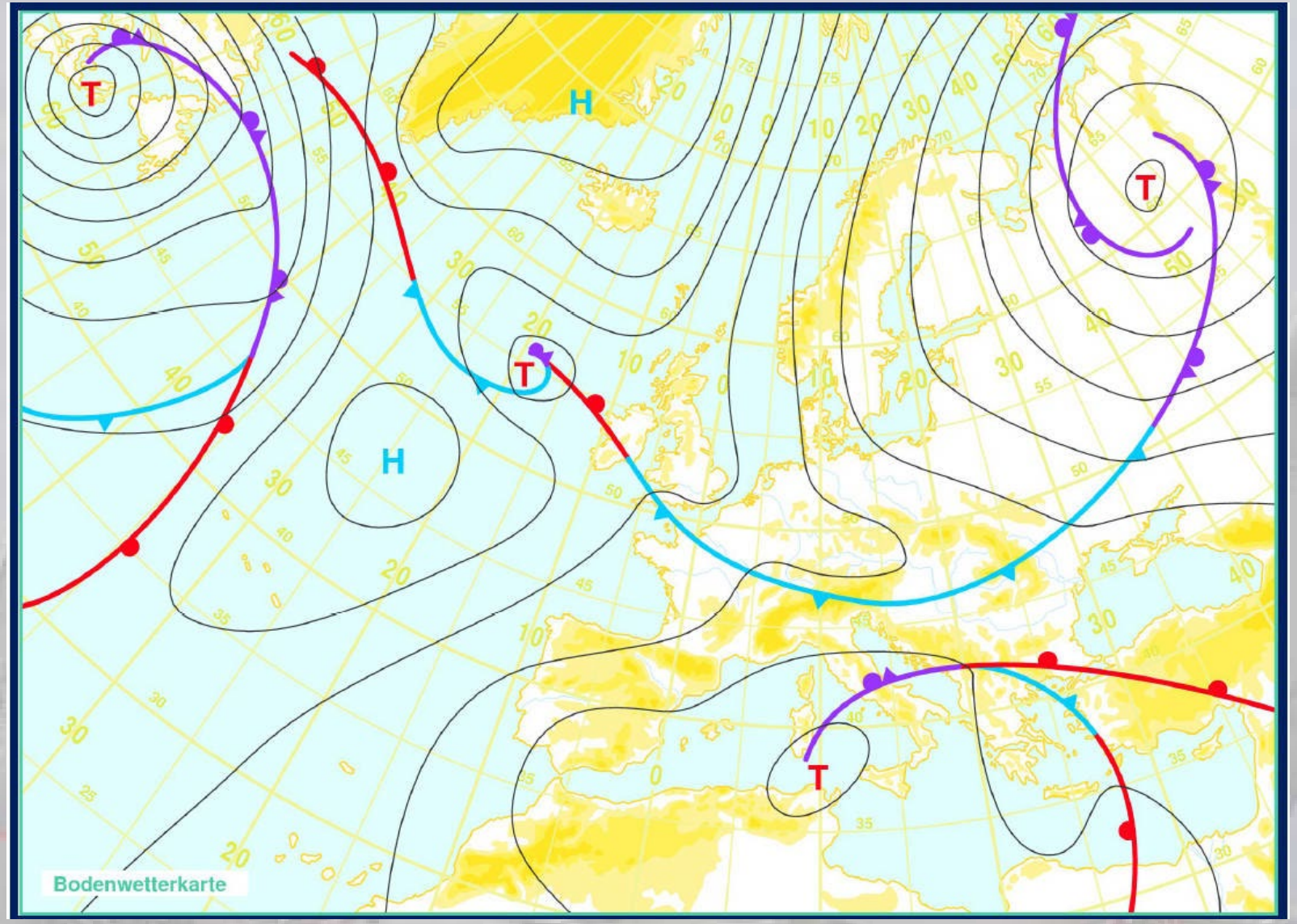
Southwest anticyclonic



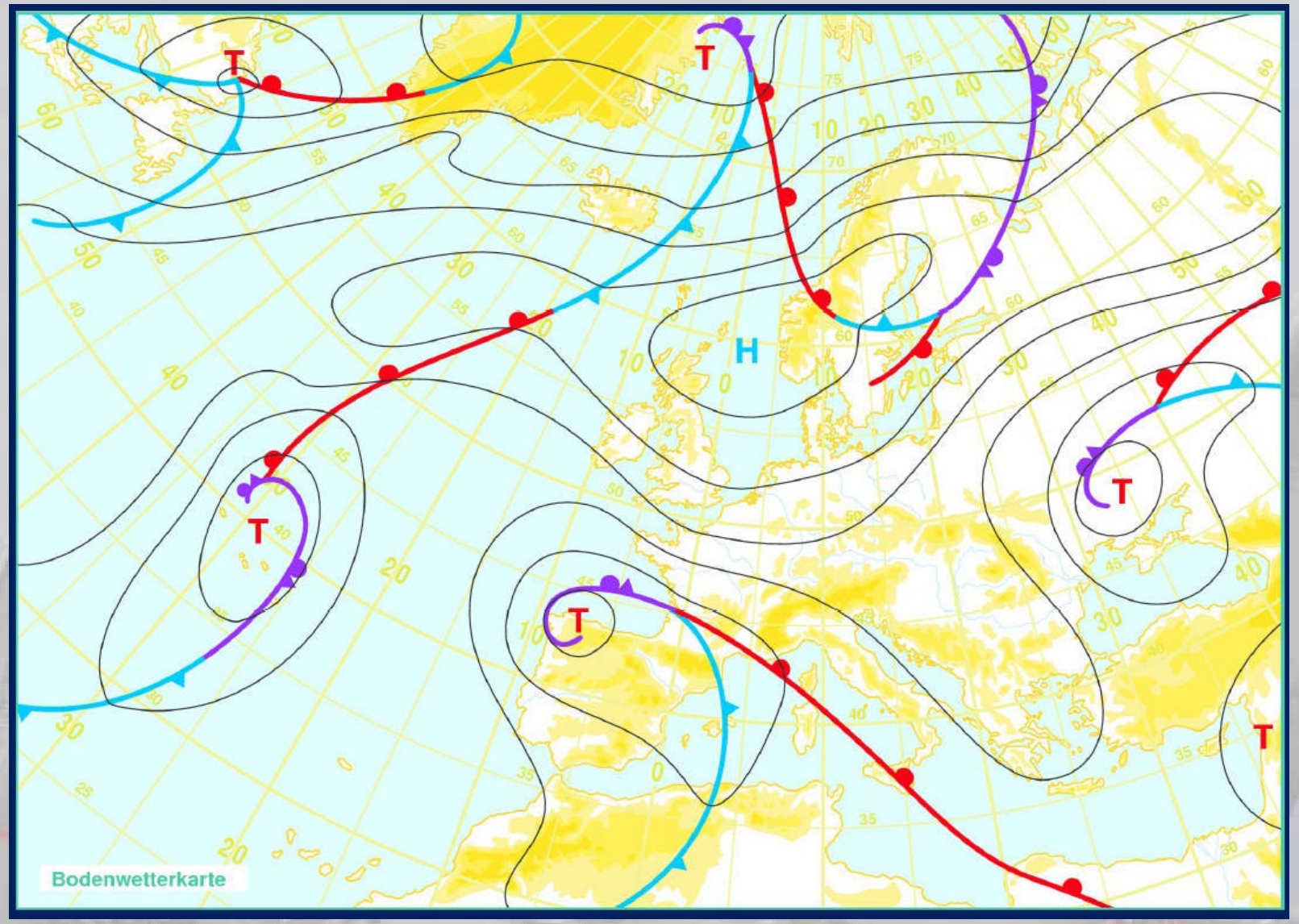
West cyclonic



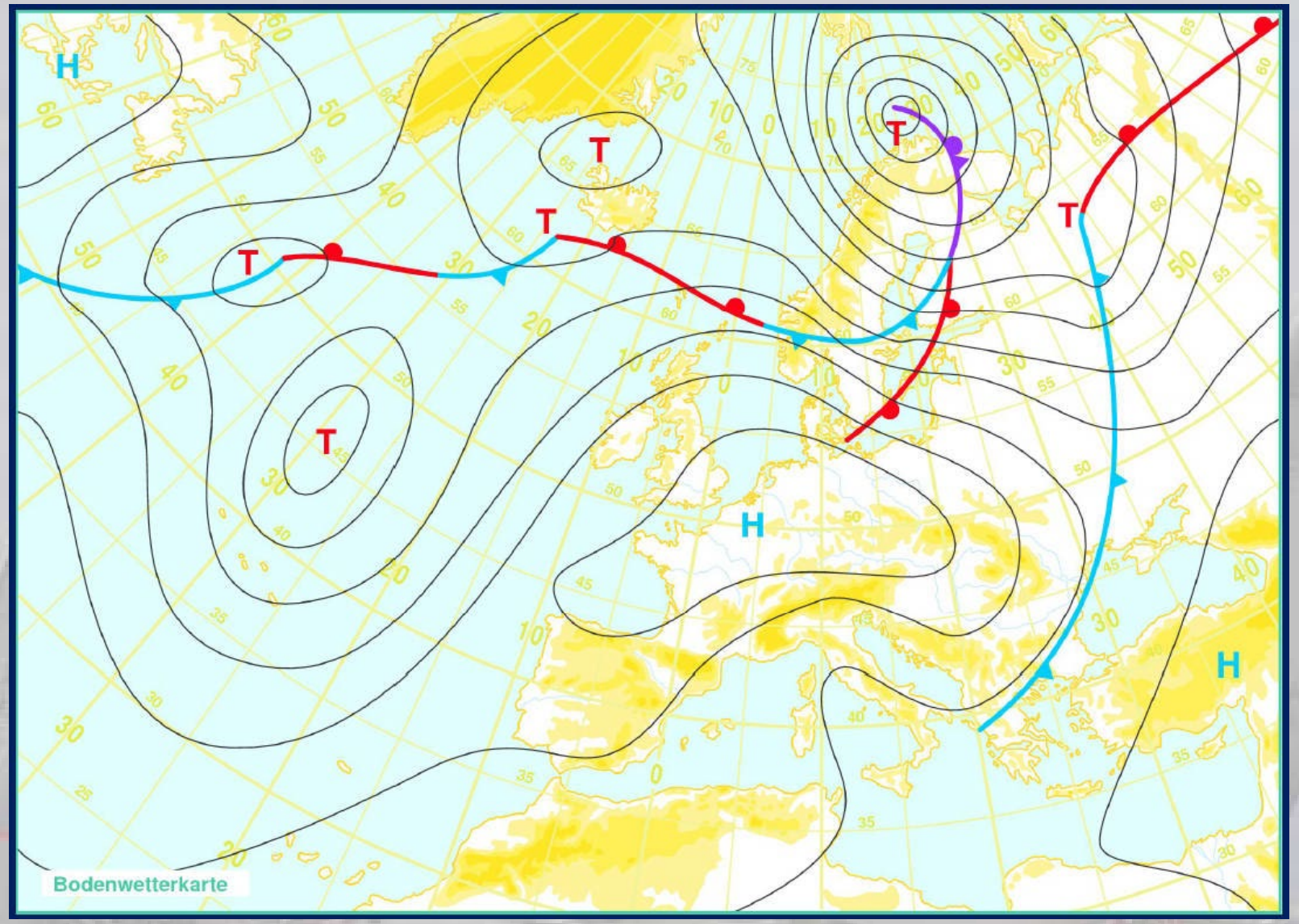
Northwest anticyclonic



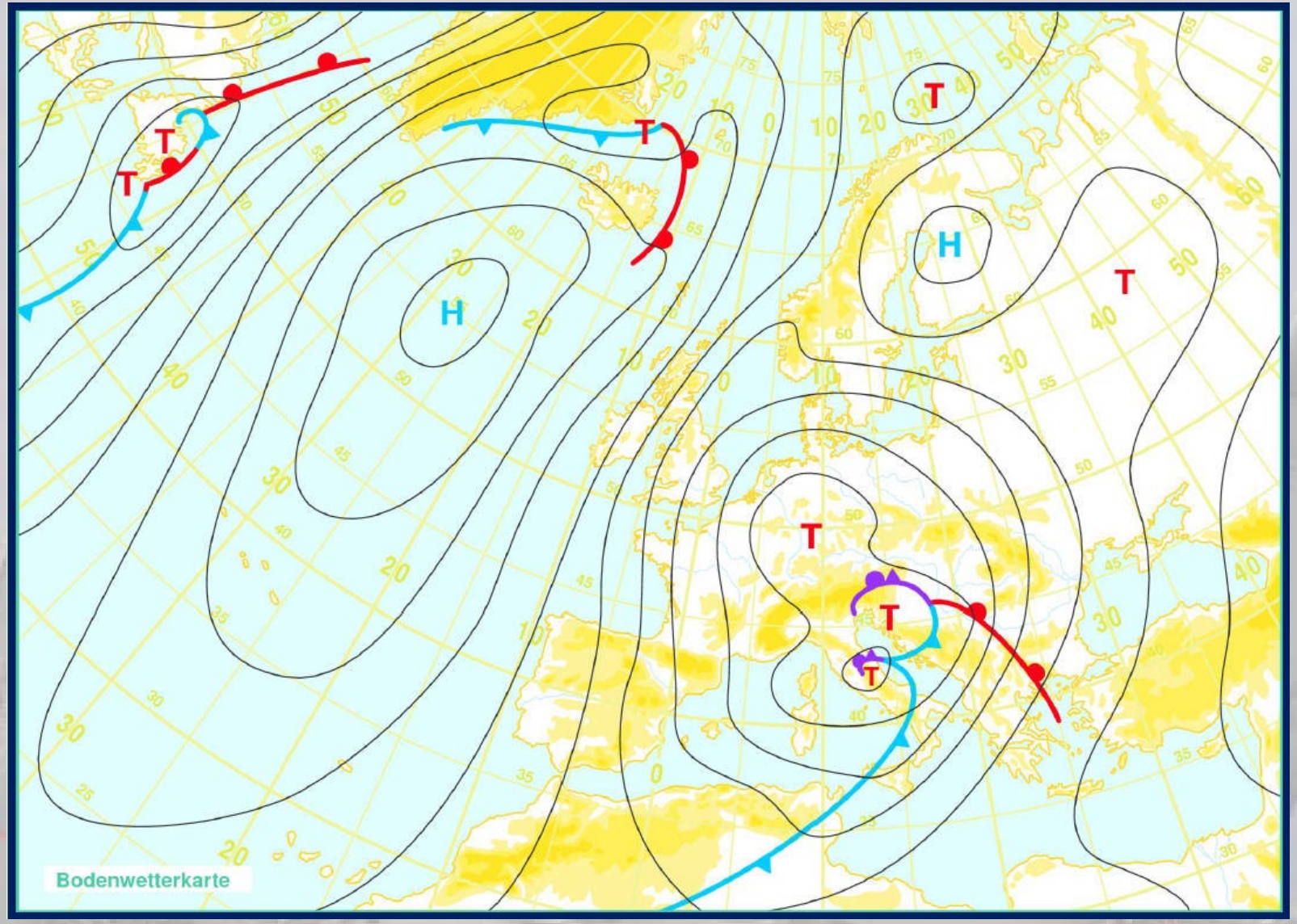
North cyclonic



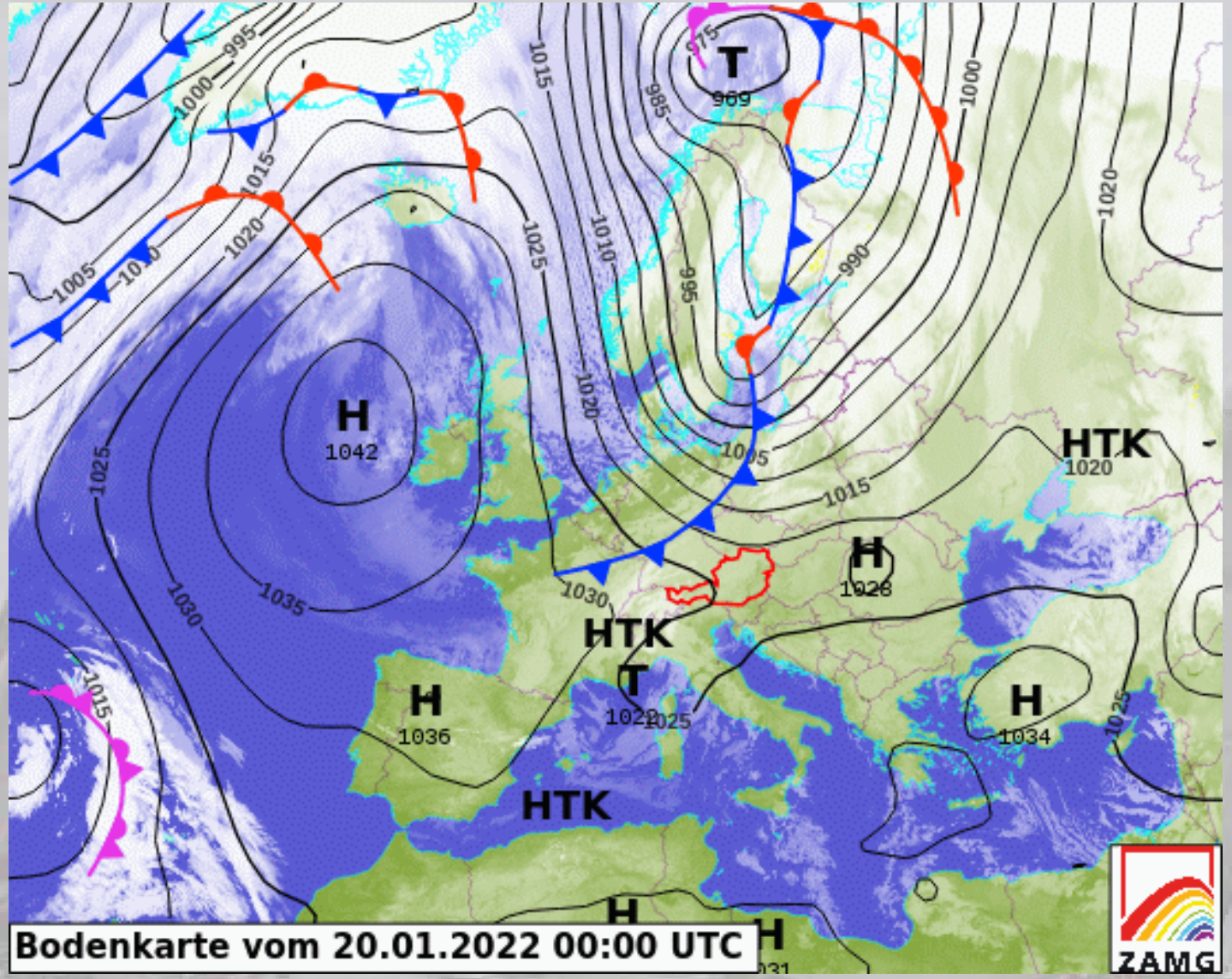
High Fenno-Scandia anticyclonic



High Central Europe



Low Central Europe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Bodenkarte vom 20.01.2022 00:00 UTC
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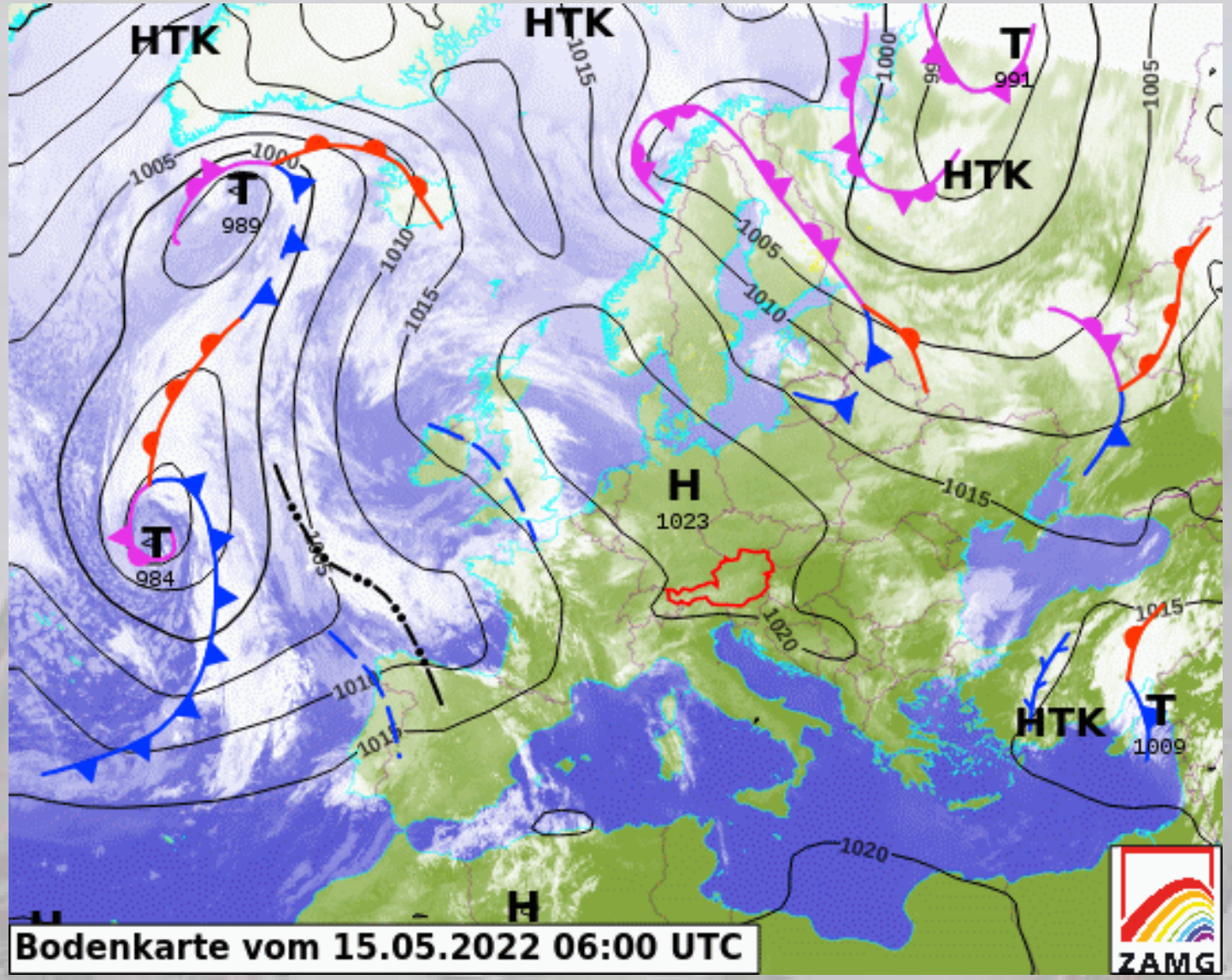
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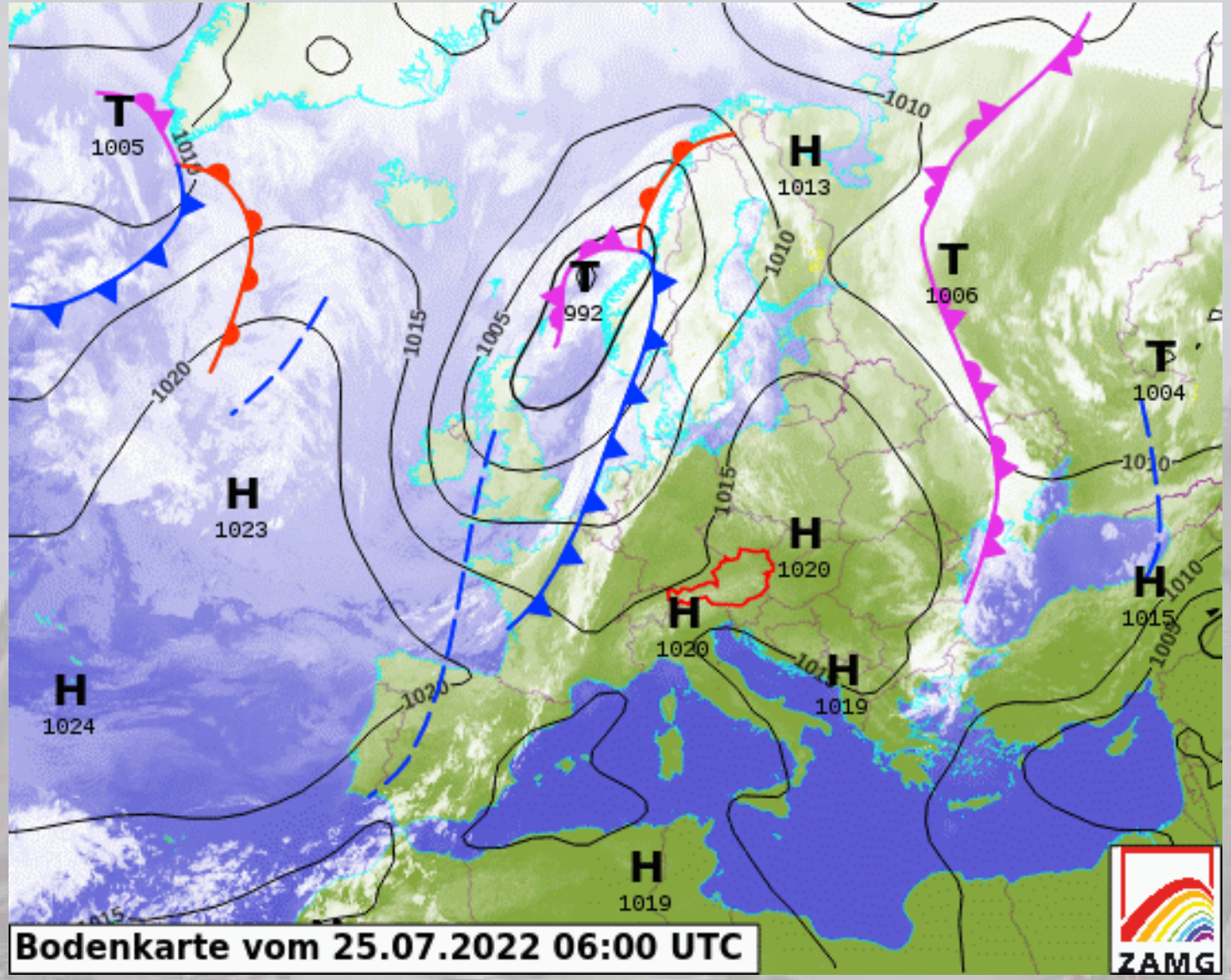
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Bodenkarte vom 25.07.2022 06:00 UTC
ZAMG

Grosswetterlagen Forecast Tree

15-day NCEP Ensembles

00 UTC Forecast from 06 May 2011

Day	Number of Ensemble Members																			Most Representative GWL Sequence		
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	
6 May	SEA																					01 SEA 01
7 May	SEA																					02 SEA 02
8 May	SA			HFA																		03 HFA 03
9 May	SA			HFA																		04 HFA 04
10 May	SA		-	HFA																		05 HFA 05
11 May	HFZ											HFA				-			WW			06 HFZ 06
12 May	HFZ											BM				-			WW			07 HFZ 07
13 May	SZ		HFZ						TRW			BM				WZ				WW		08 HFZ 08
14 May	SZ				TRW					-		BM				WZ				WW		09 TRW 09
15 May	SZ				TRW						SWA	BM			-		WZ			WW		10 TRW 10
16 May	SZ				TRW						SWA			-								11 TRW 11
17 May	SZ					TRW					SWA			-								12 SZ 12
18 May	SZ					TRW					SWA		SWZ		NWA		-					13 SZ 13
19 May	SZ					TRW			SA		SWA			-								14 SZ 14
20 May	SZ						TRW		SA			SWA		-								15 SZ 15

Surface Sequence Movie | Mid-Troposphere Sequence Movie

Scientific / Meteorological Content Dr. Paul James, FEZE-B / DWD Graphics SynopVis

QUESTIONS YOU SHOULD BE ABLE TO ANSWER

Grosswetterlagen GWL General Weather Situations GWS

**The General Weather Situation is a site-specific designation,
i.e. at the same observation time,**

**SWz for Berlin can be
NWz for Hamburg and
NEz for Copenhagen**

- ✓ **Which GWS is characterized by unsteady weather, rain at time, mostly cloudy?**
  - ✓ **Type cyclonic from westerly directions SWz Wz NWz**
- ✓ **Which GWS is characterized by dry weather, mostly sunny, no rain?**
  - ✓ **Type anti-cyclonic from easterly directions NEz Ez SEz**
- ✓ **Which GWS is characterized by dry and hot / cold weather in summer / winter?**
  - ✓ **Type anti-cyclonic from easterly directions NEz Ez SEz**

QUESTIONS YOU SHOULD BE ABLE TO ANSWER

Grosswetterlagen GWL General Weather Situations GWS

- ✓ Which GWS is characterized by mild weather in winter?
  - ✓ Type cyclonic from westerly directions SWz
- ✓ Which GWS is characterized by mild weather in winter?
  - ✓ Type cyclonic from westerly directions SWz Wz NWz
- ✓ Which GWS is characterized by stormy weather, high PROBability Thunderstorm in summer?
  - ✓ Type cyclonic from westerly directions SWz Wz NWz


RA-57