

# Use of the **Java TopTask** Weather Browser

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OSTIV meteorological panel  
Pfaffstätten, 26 September, 2009



# Outline

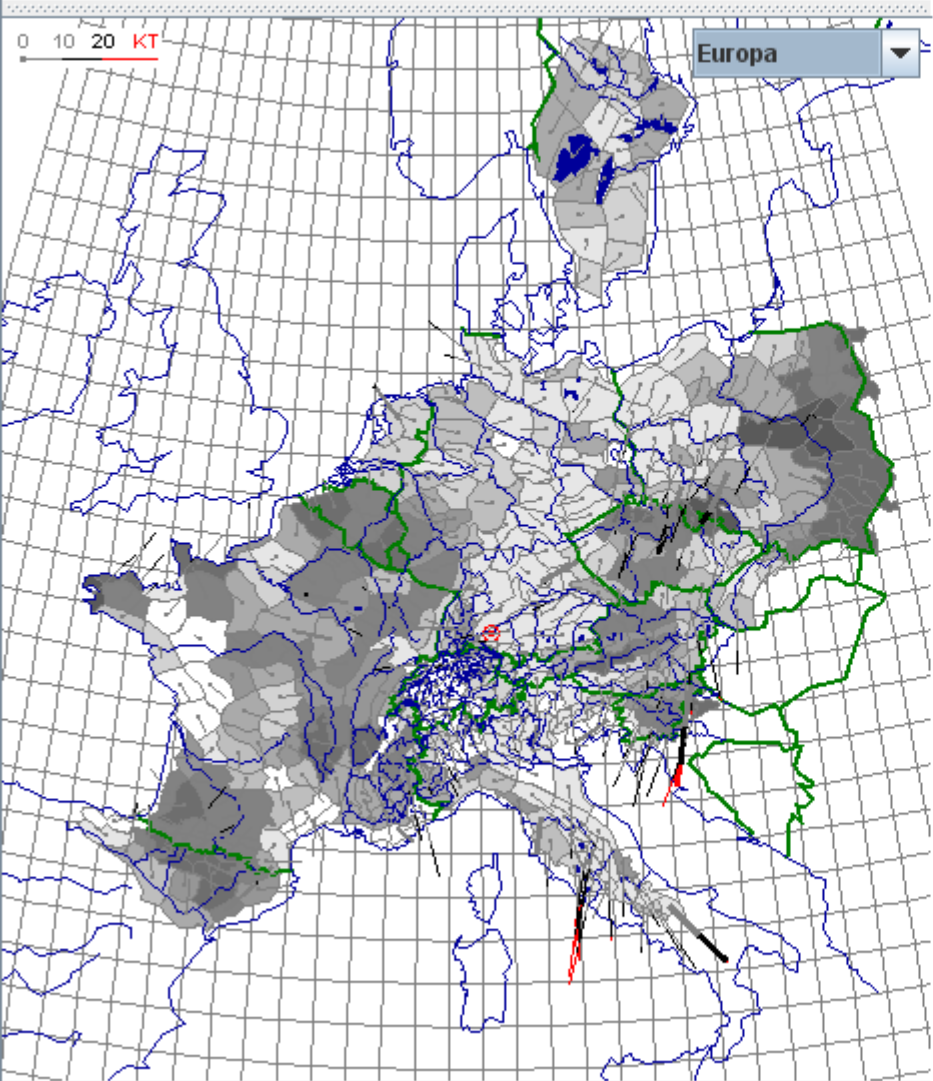
- **Browsing a forecast**
- **Task planning**
- **Flight simulations with predicted weather**
- **Unstable forecasts**



# Browsing a forecast

- downloading, archiving
- browsing a forecast:  
interactive map (xy) and barogram (zt)
- map options:  
background, foreground, PFD, T, Td, clc, wind
- barogram options: vertical range, shifting time

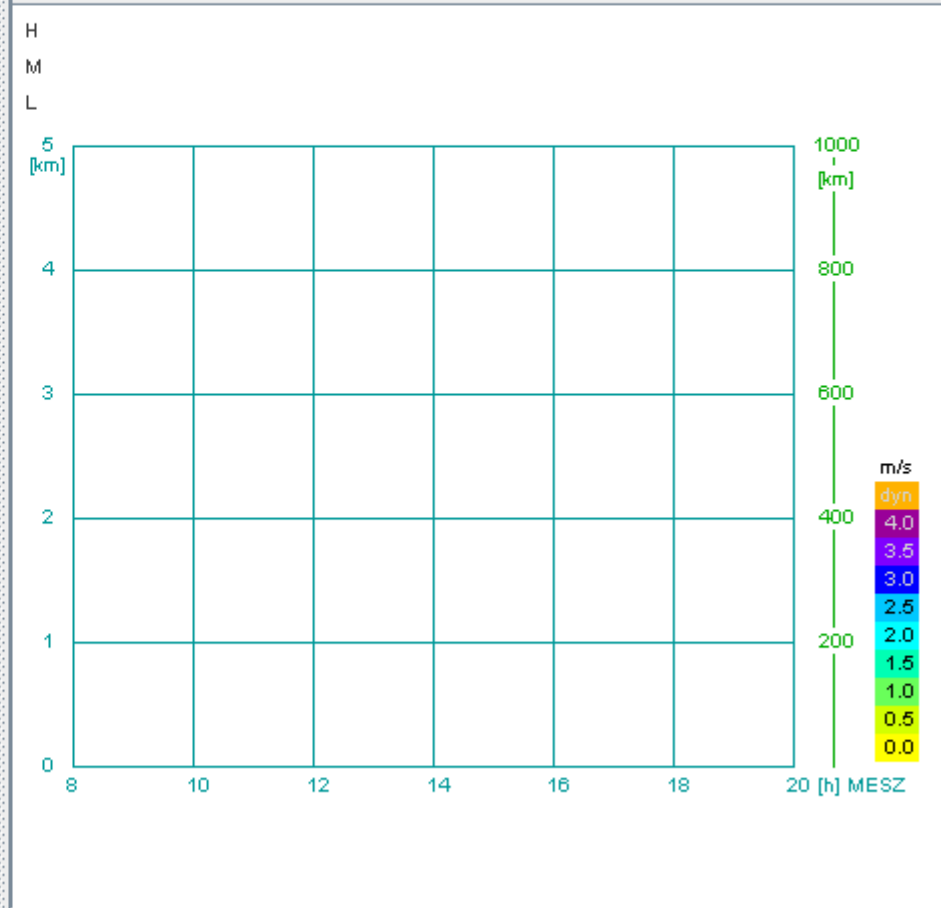


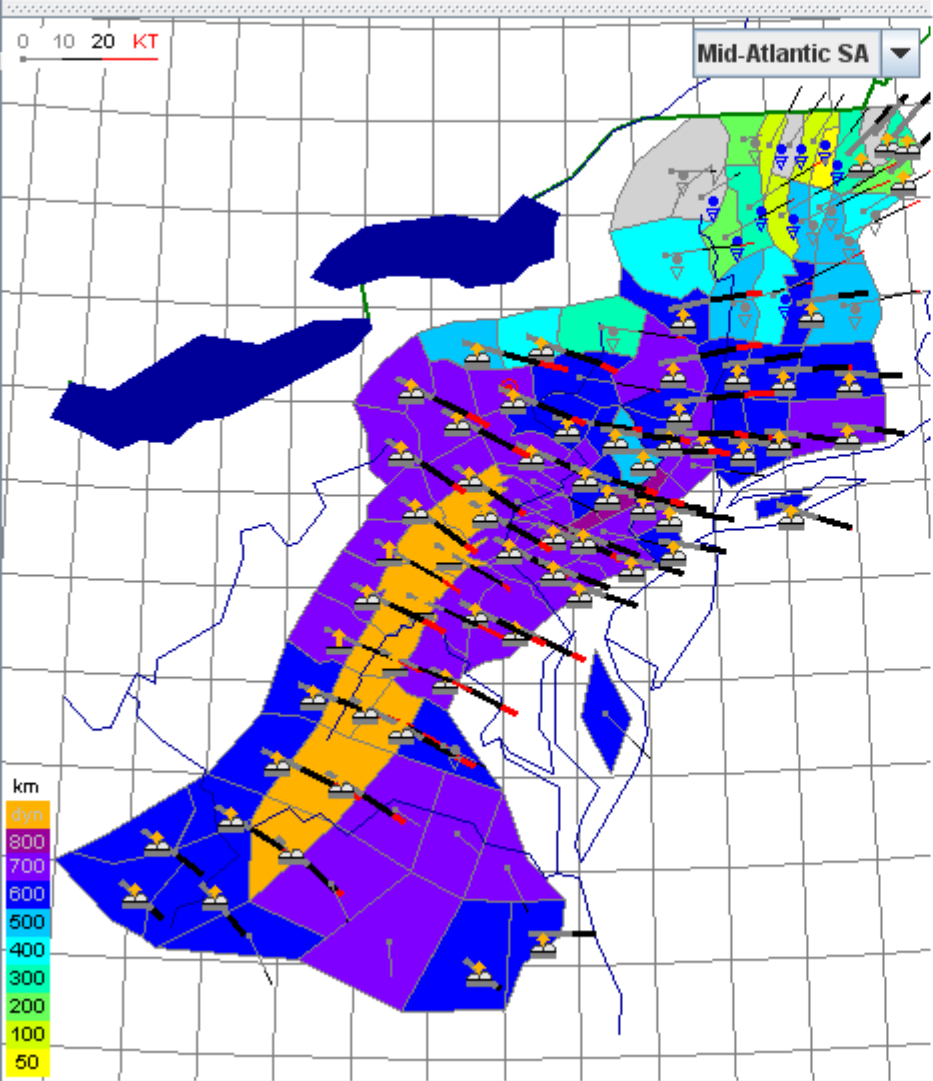


Flugzeug Index FB Polare

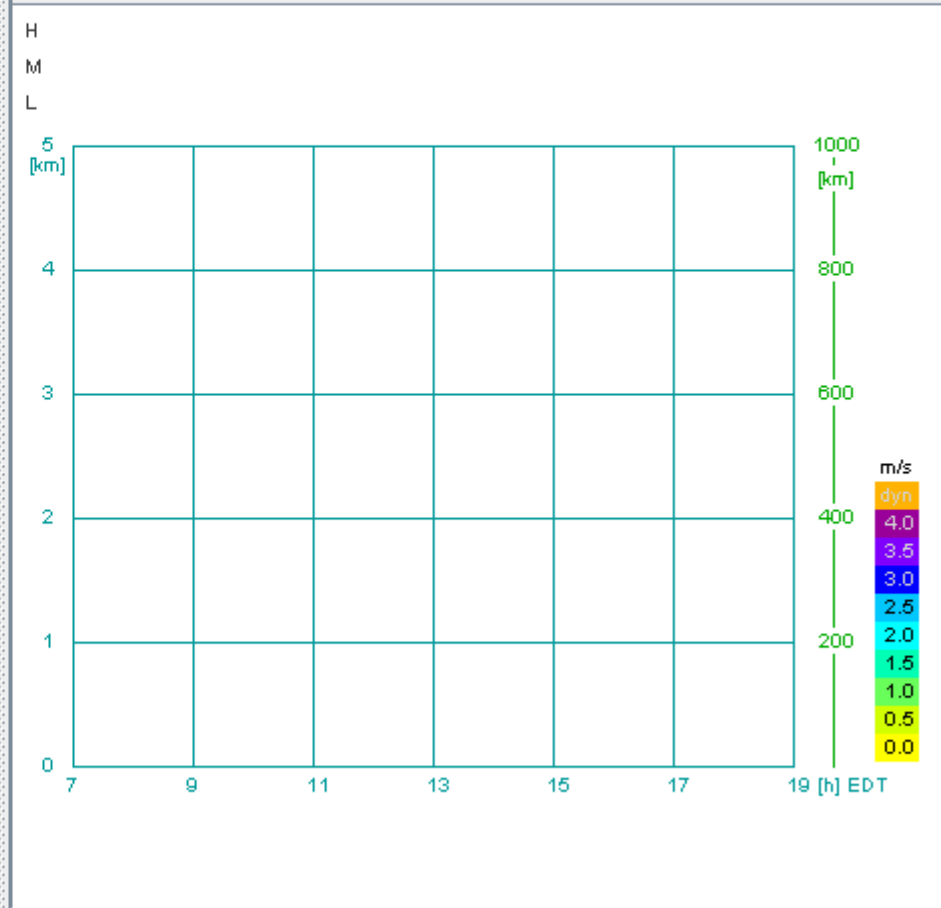
Offen 130 44 56@103

Aufreihungen



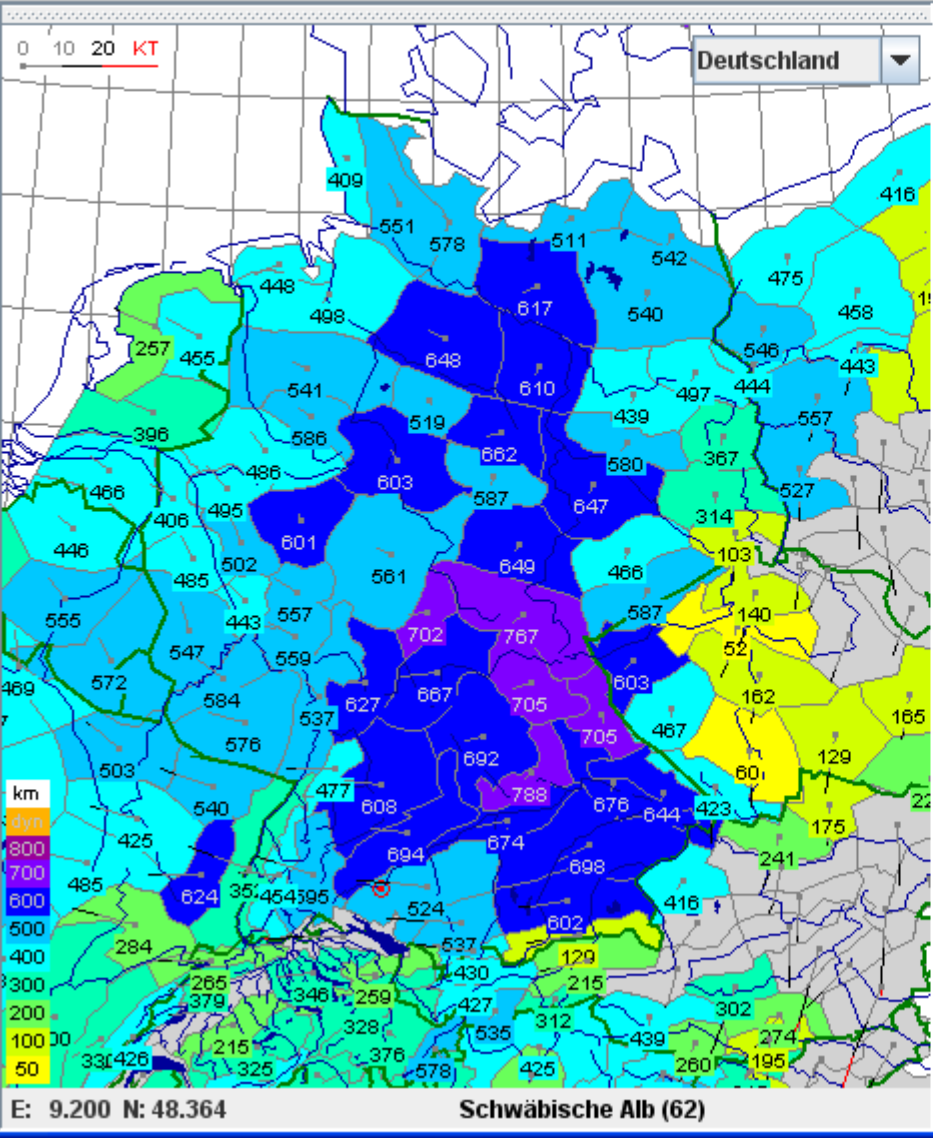


Flugzeug: 15m  
Index: 112  
FB: 40  
Polare: 47@101  
 Aufreihungen



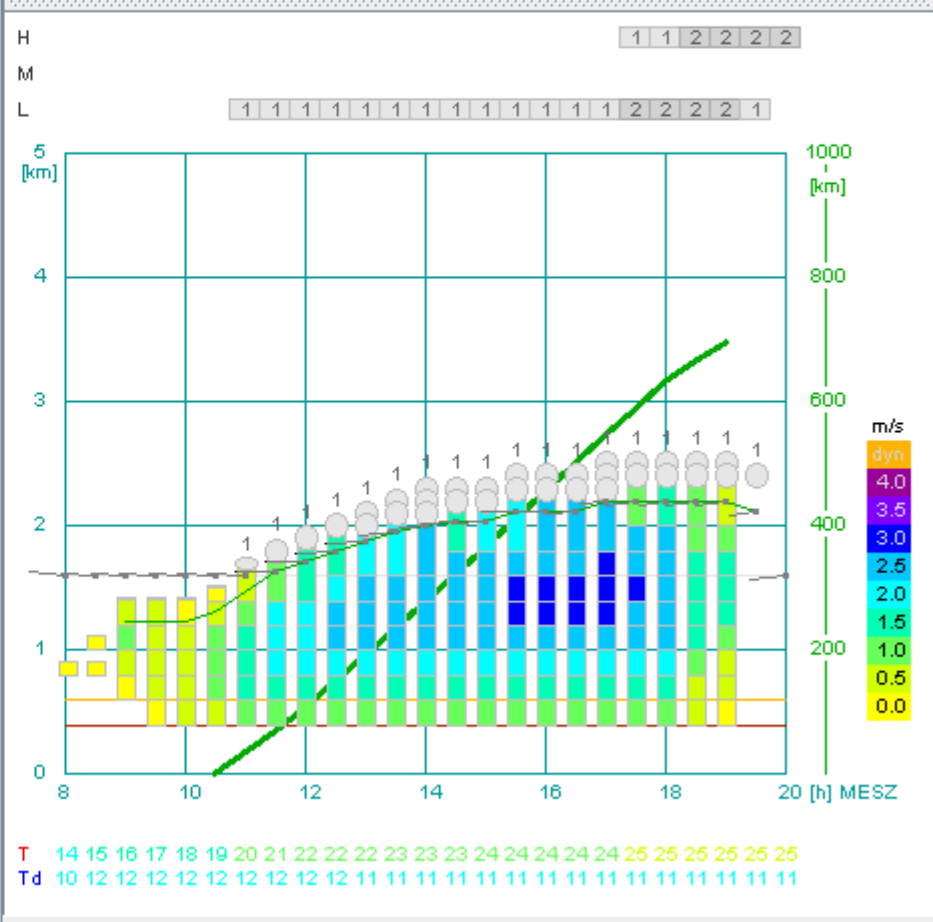
t: 13:00 z: 0





Flugzeug: Standard  
 Index: 108  
 FB: 37  
 Polare: 44@97

Aufreihungen



[LM 03z-18z, WMO 19/20 06z]

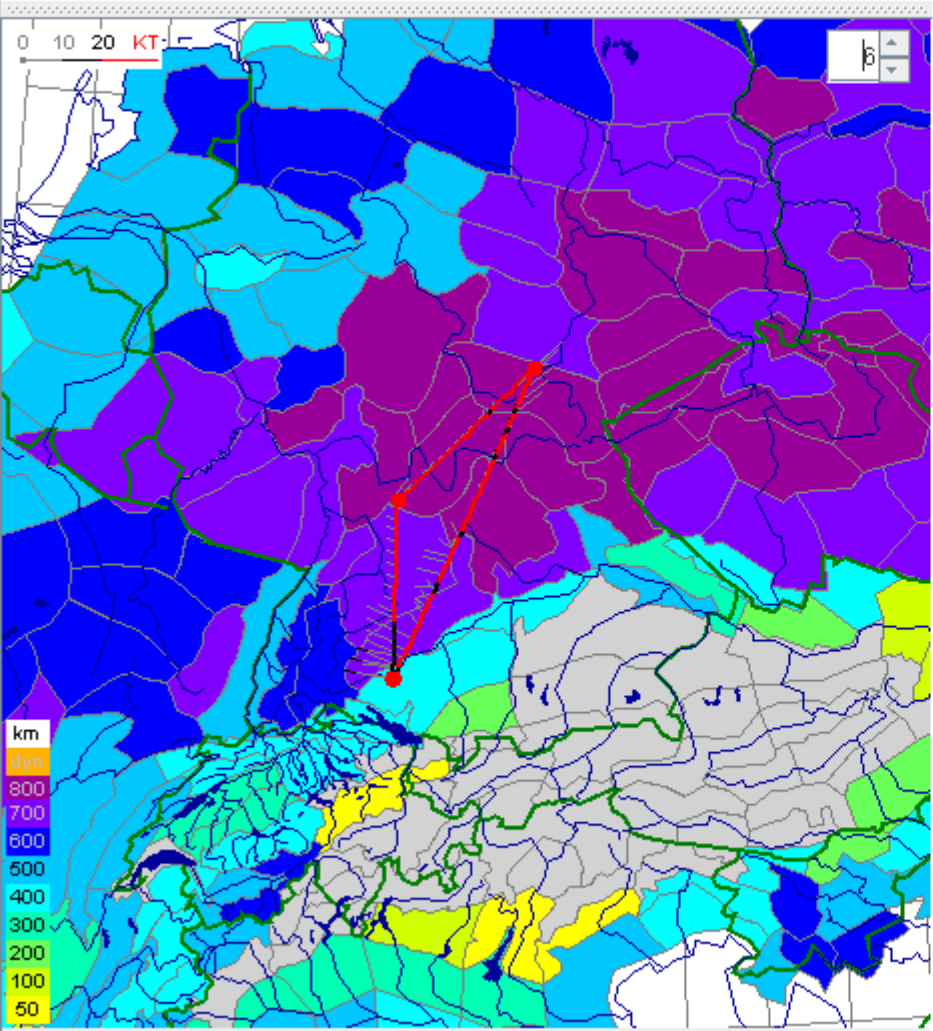


# Task planning

- **homebase**
- **creating a task: homebase, turnpoints**
- **adjusting a task: dragging, removing, and adding turnpoints.**
- **saving tasks**
- **opening task files**



A 680km 12:15-18:49 104km/h



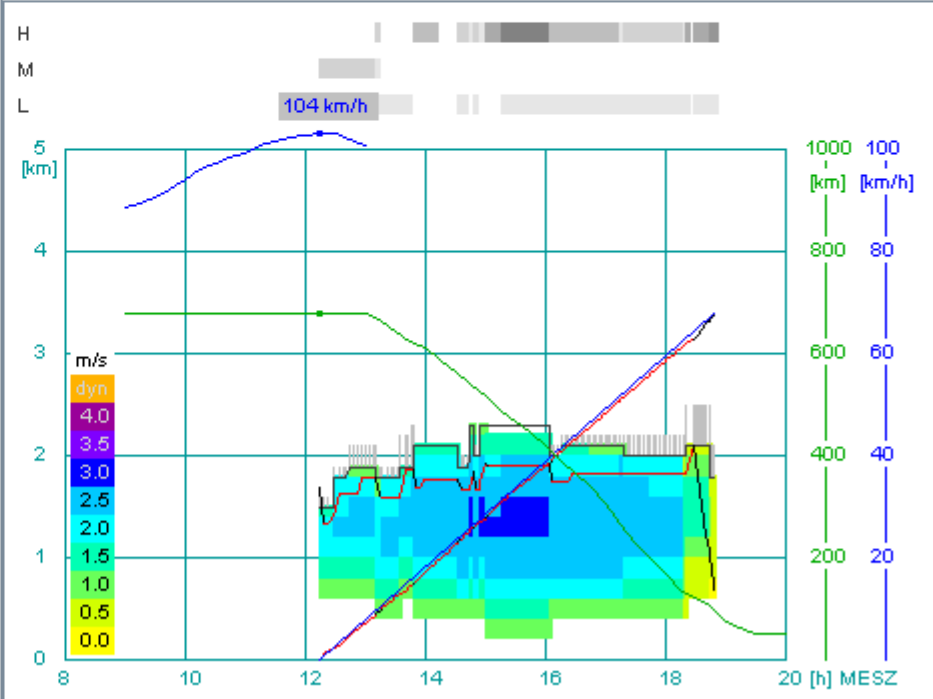
E: 10.148 N: 48.687

Schwaebische Alb (62)

AAT  
 umgekehrt  
 Optimum  
 Aufreibungen

Flugzeug: 18m  
 Index: 118  
 FB: 42  
 Polare: 50@102

Punkt	Name	Länge	Breite
Abflug	Mengen Hohen	9.373	48.054
Wende #1	Rudolstadt G	11.236	50.733
Wende #2	Wallduern	9.402	49.582
Ziel	Mengen Hohen	9.373	48.054



Flugaufgabe





# Flight simulations

- recorded flights (igc files)
- flight altitudes --- depth of the CBL
- ground speed: real vs. simulated speed
- aligned lift: convective rolls, slope lift, wave lift



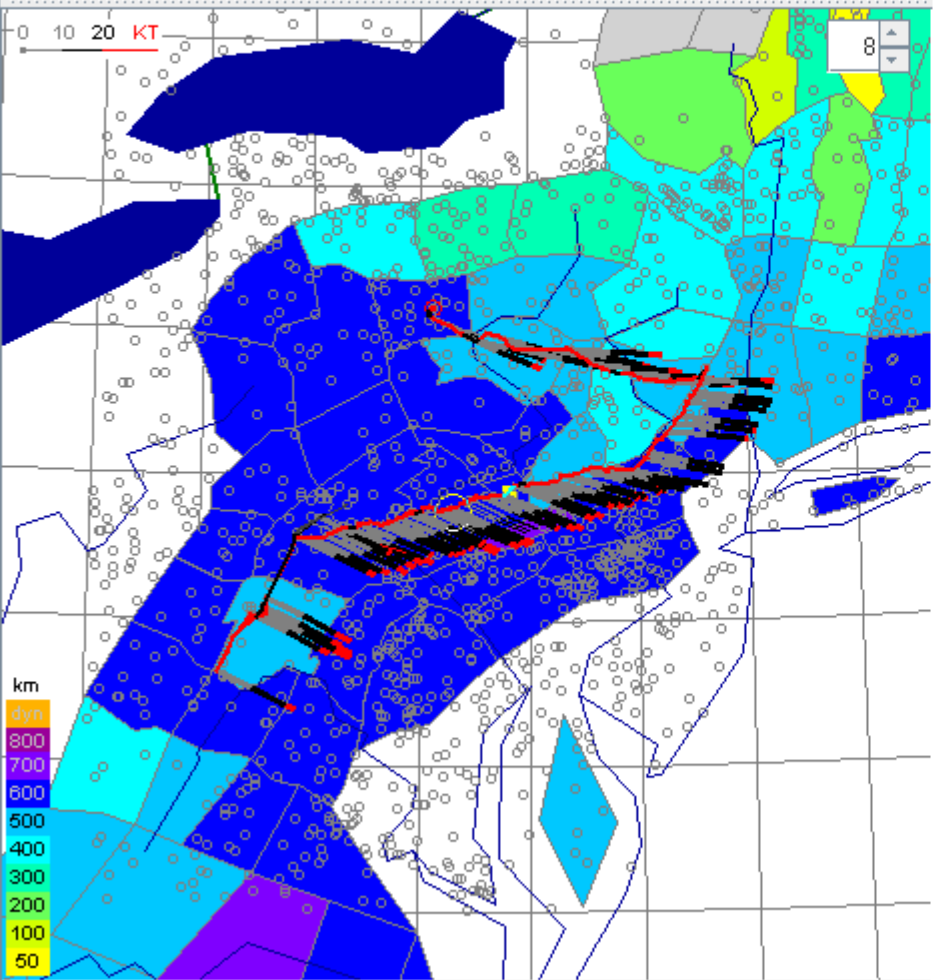
TOPTHERM Aufgabe Flug Karte Barogramm Einstellungen Info

Al003km	08:45-20:17	87km/h	95ulcnil.igc
F1022km	10:01-19:25	109km/h	95ulcnil.igc

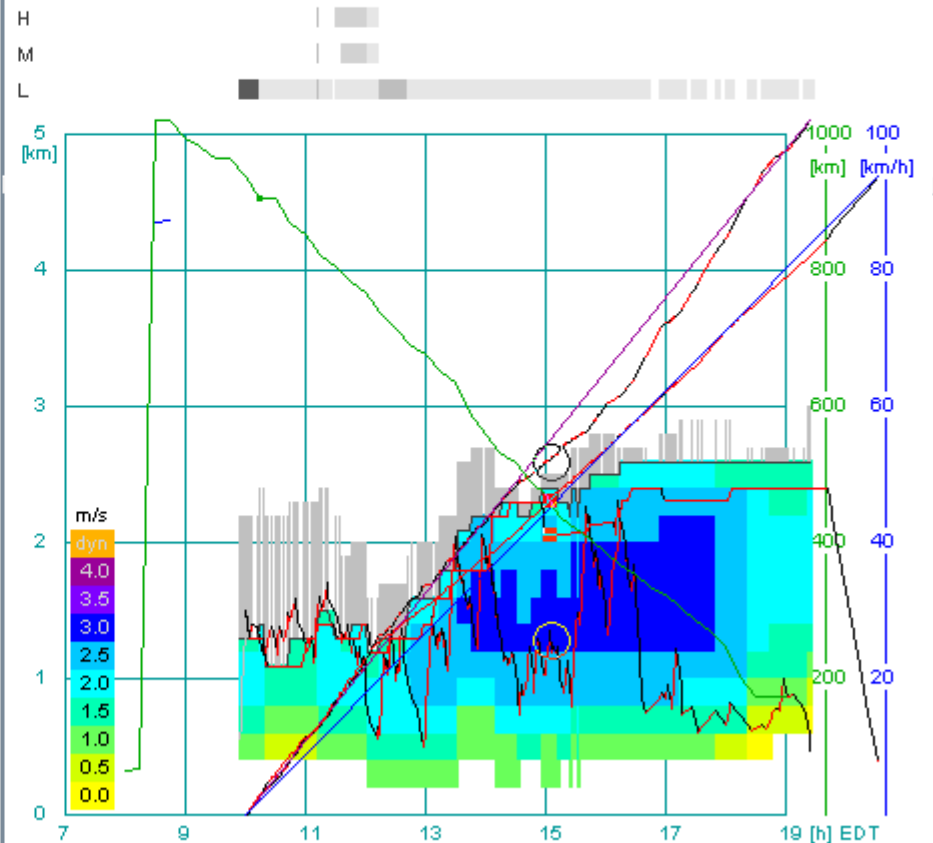
TopTask

Flugzeug: 15m | Index: 112 | FB: 40 | Polare: 47@101

Aufreihungen



g847 (847)

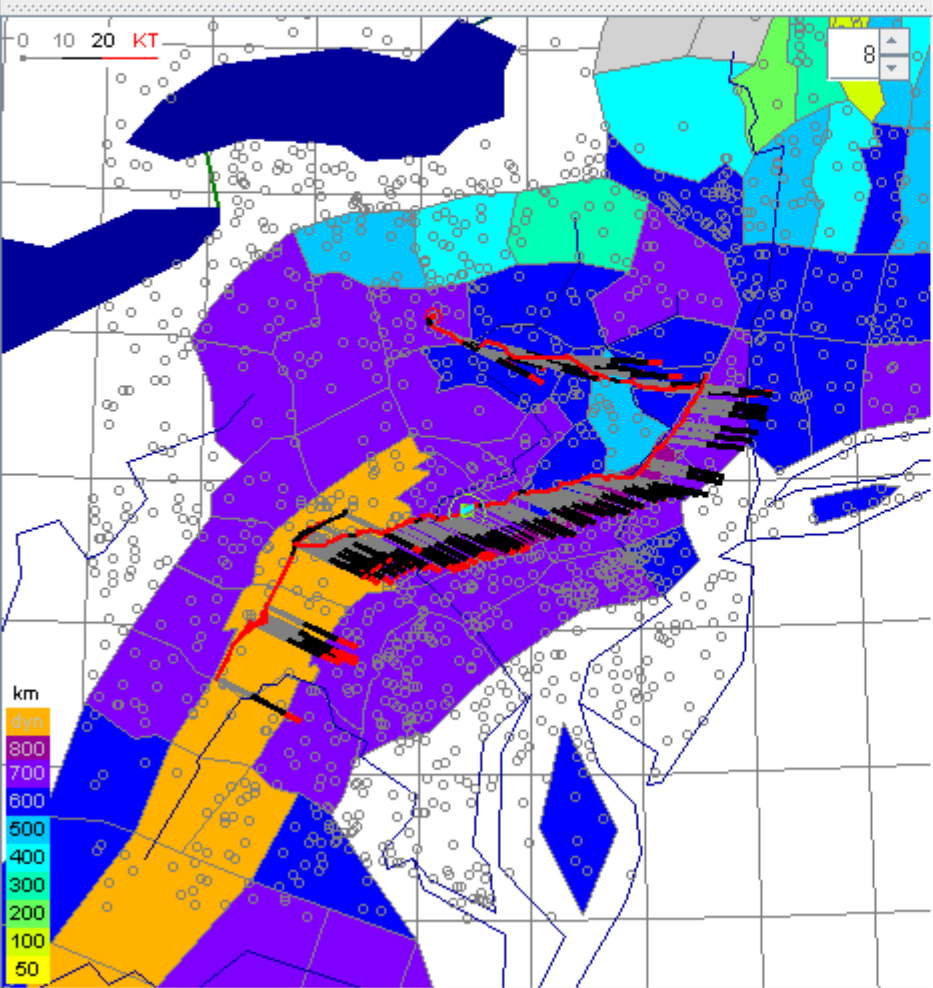


t: 15:03 z: 900 300509 DALE.KRAMER VENTUS2CX N131CX 15-METER



TOPTHERM Aufgabe Flug Karte Barogramm Einstellungen Info

Al003km	10:45-19:58	109km/h	95ulcnil.igc
F1022km	10:01-19:25	109km/h	95ulcnil.igc

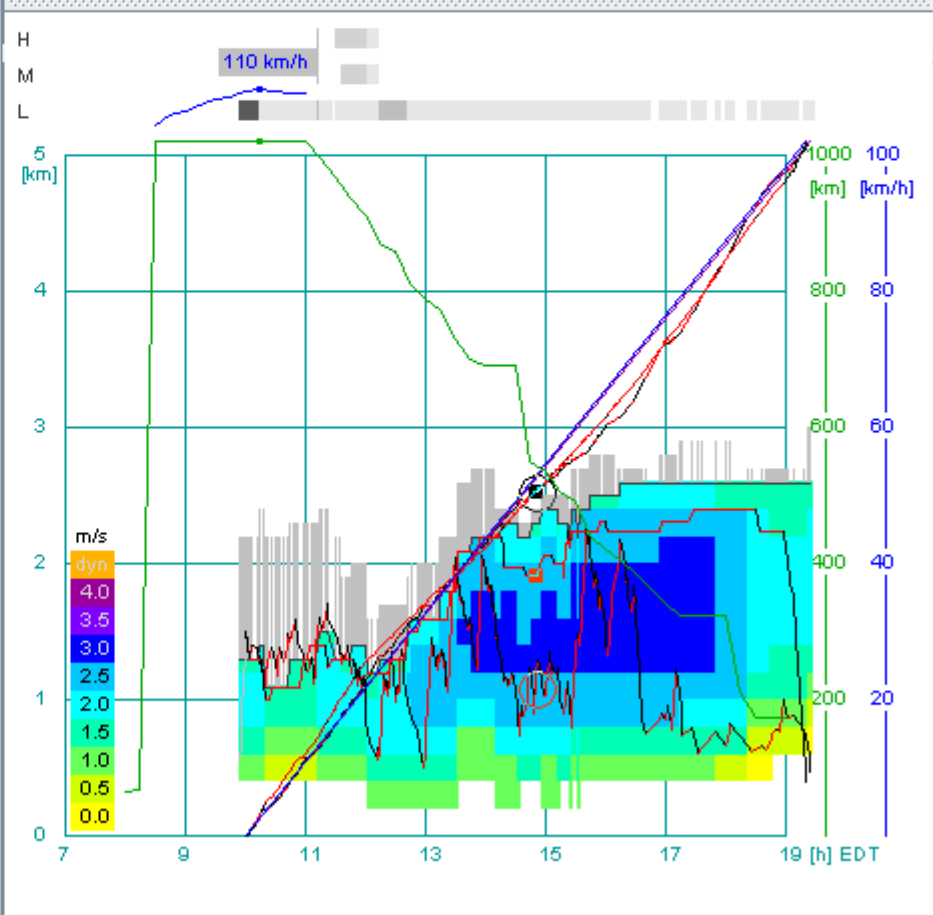


g823 (823)

TopTask

Flugzeug	Index	FB	Polare
15m	112	40	47@101

Aufreihungen  Welle



t: 14:50 z: 300 300509 DALE.KRAMER VENTUS2CX N131CX 15-METER



# Changes to TOPTHERM in 2009

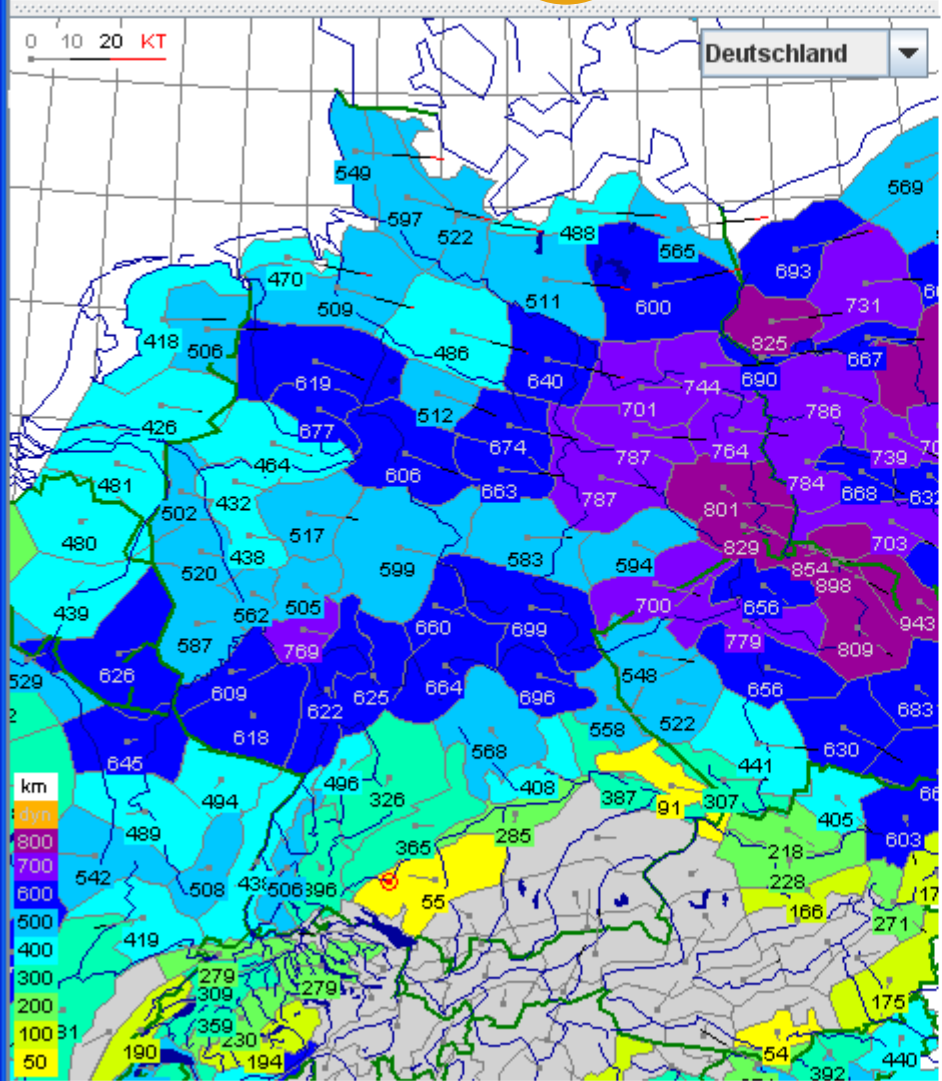
- **tighter coupling to the NWP model output (hourly vertical profiles at full vertical resolution)**
  - > **TOPTHERM can be coupled to any NWP model that provides hourly vertical profiles (e.g. COSMO-EU, GME, COSMO-DE, ... )**
- **assimilation of surface observations: weight of obs increased versus weight of NWP profiles**
  - > **caused problems ...**



# Unstable forecasts

- first forecast (morning of d-1)
- second forecast (evening of d-1)
- third forecast (very early morning of d)
- fourth forecast (early morning of d)
- final forecast (briefing time of d)

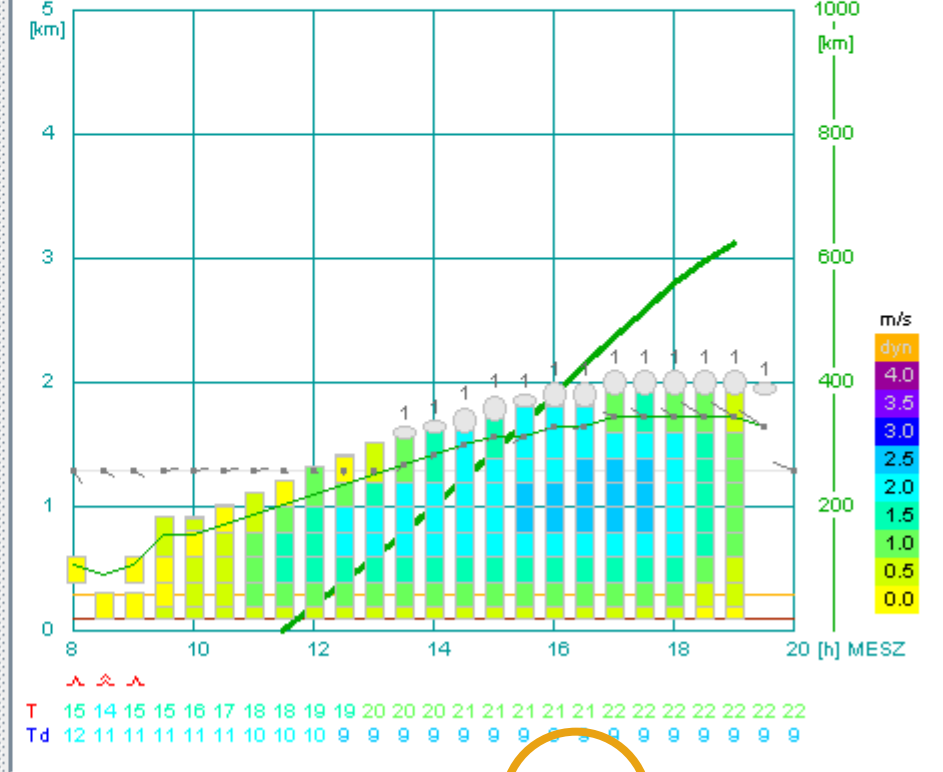




Flugzeug 18m Index 118 FB 42 Polare 50@102

Aufreichungen

H	7	6	6	7	7	5	5	3	3	2	2	2	2	1	1	1	1	2	2
M	2	1	1	1	4	4	2	2	1	1									
L	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1																		

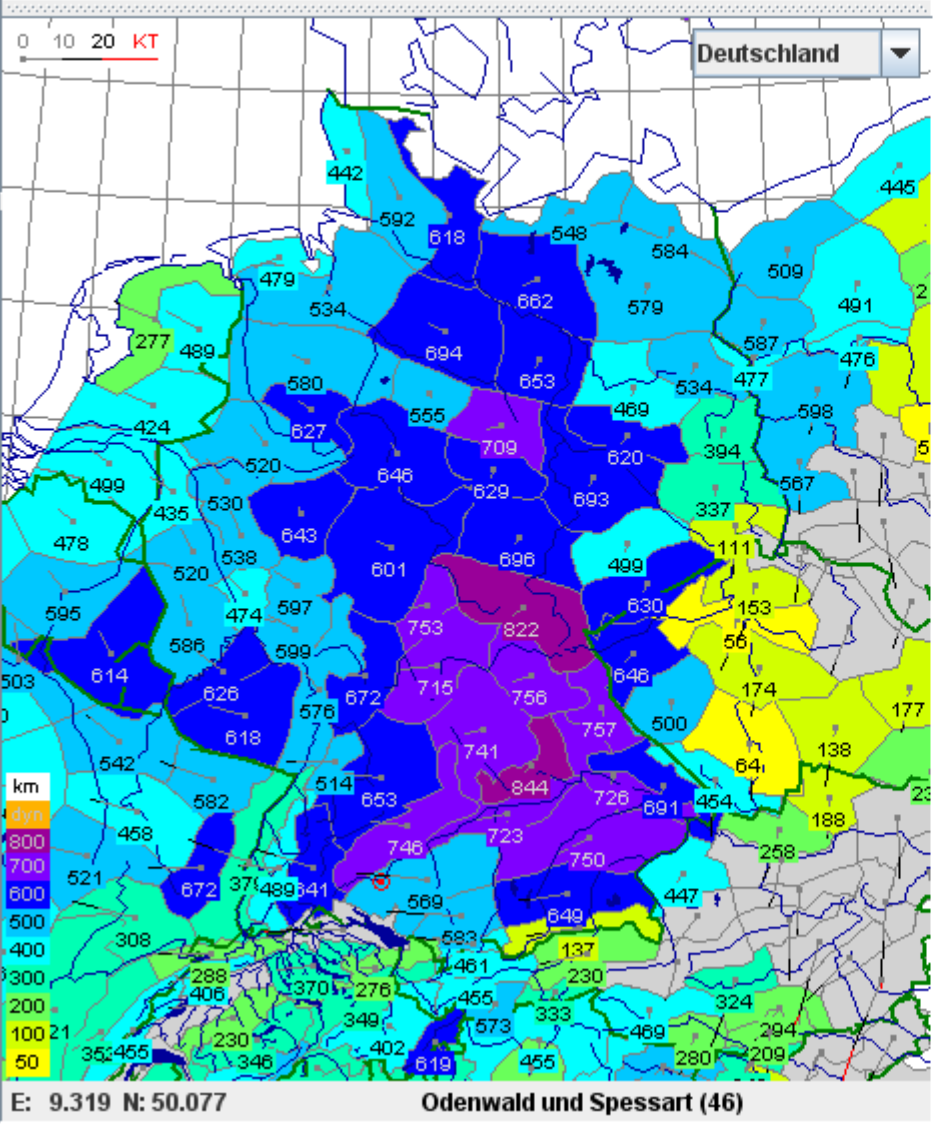


# Unstable forecasts ...

... revealed an assimilation problem with the surface observations of temperature and dewpoint !

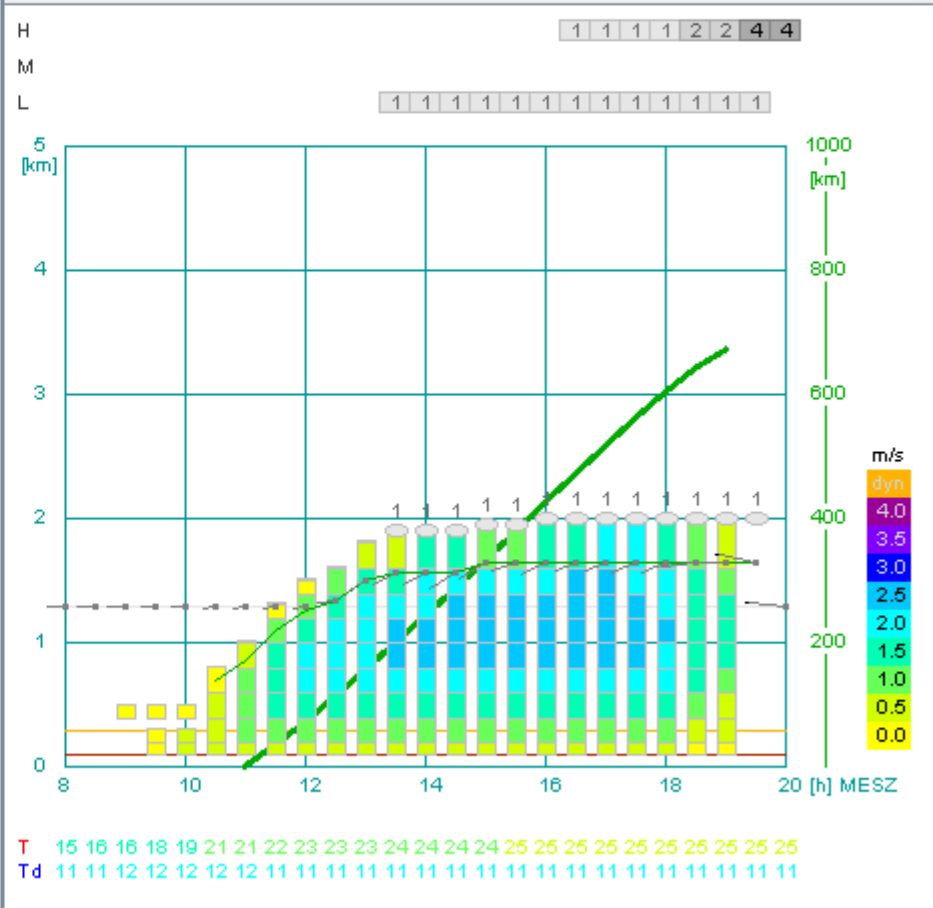
The assimilation procedure has been fixed ...





Flugzeug: 18m  
 Index: 118  
 FB: 42  
 Polare: 50@102

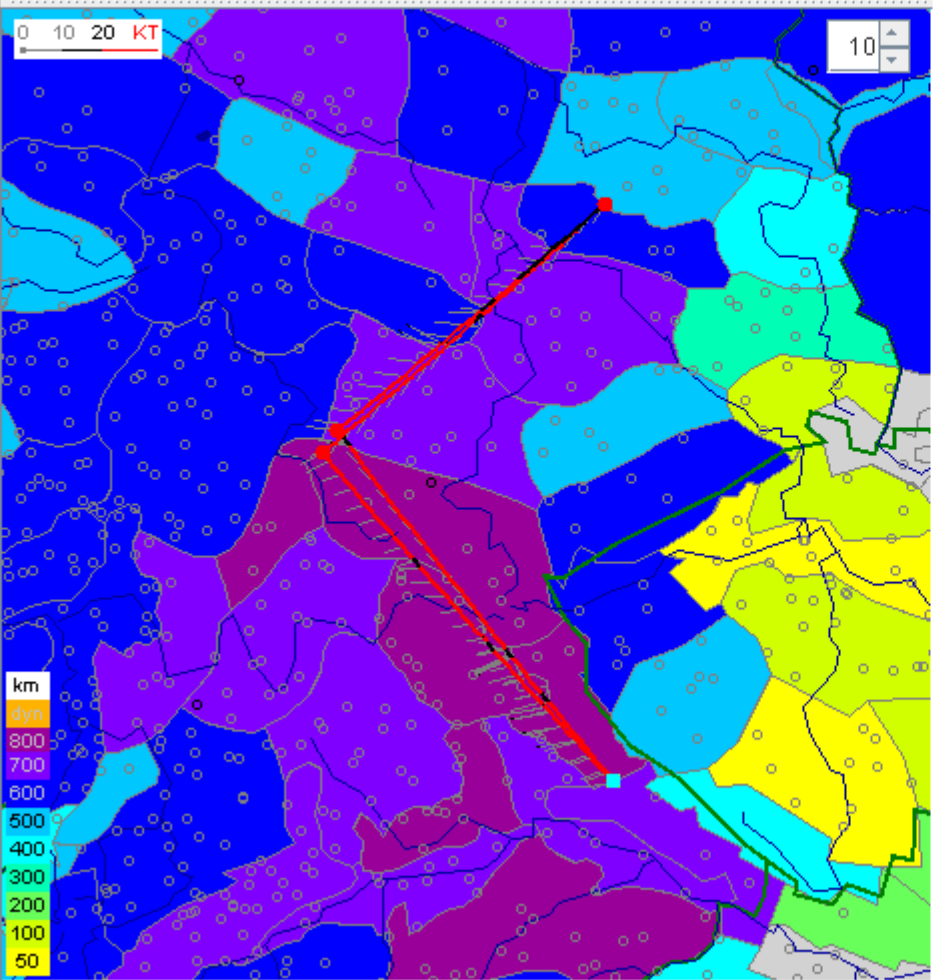
Aufreihungen





TOPTHERM Aufgabe Flug Karte Barogramm Einstellungen Info

A	911km	11:00-19:31	107km/h	985f1301.igc
F	992km	10:47-19:54	109km/h	985f1301.igc

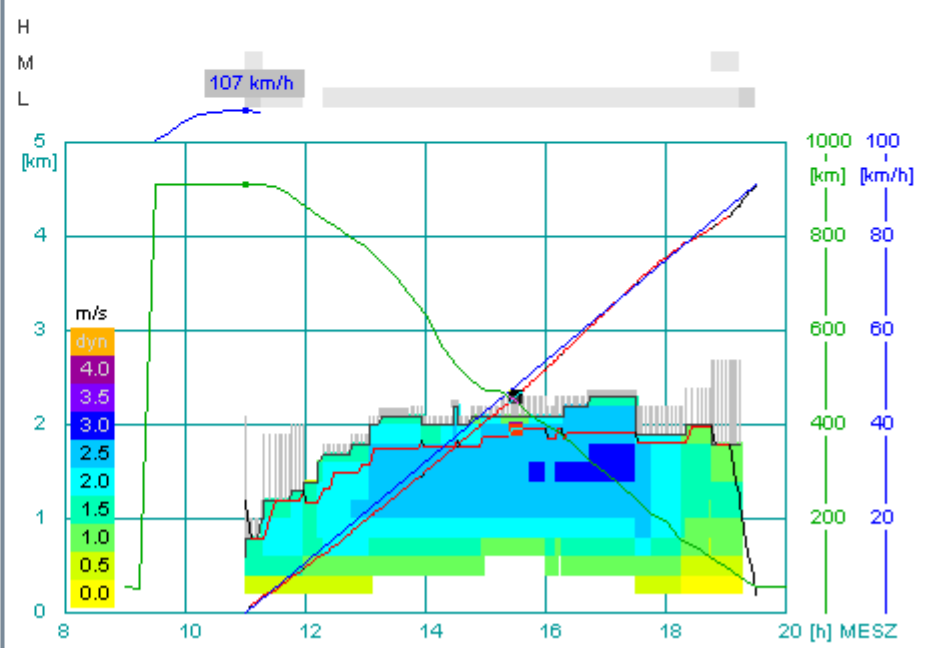


Praha (375)

AAT  
 umgekehrt  
 Optimum  
 Aufreihungen

Flugzeug: **Offen**  
 Index: **130**  
 FB: **44**  
 Polare: **56@103**

Punkt	Name	Länge	Breite
Abflug	LUSSE	12.67	52.144
Wende #1	TH	10.358	50.877
Wende #2	CHAM_JA	12.657	49.211
Wende #3	EISENACH	10.476	50.992
Ziel	LUSSE	12.67	52.144

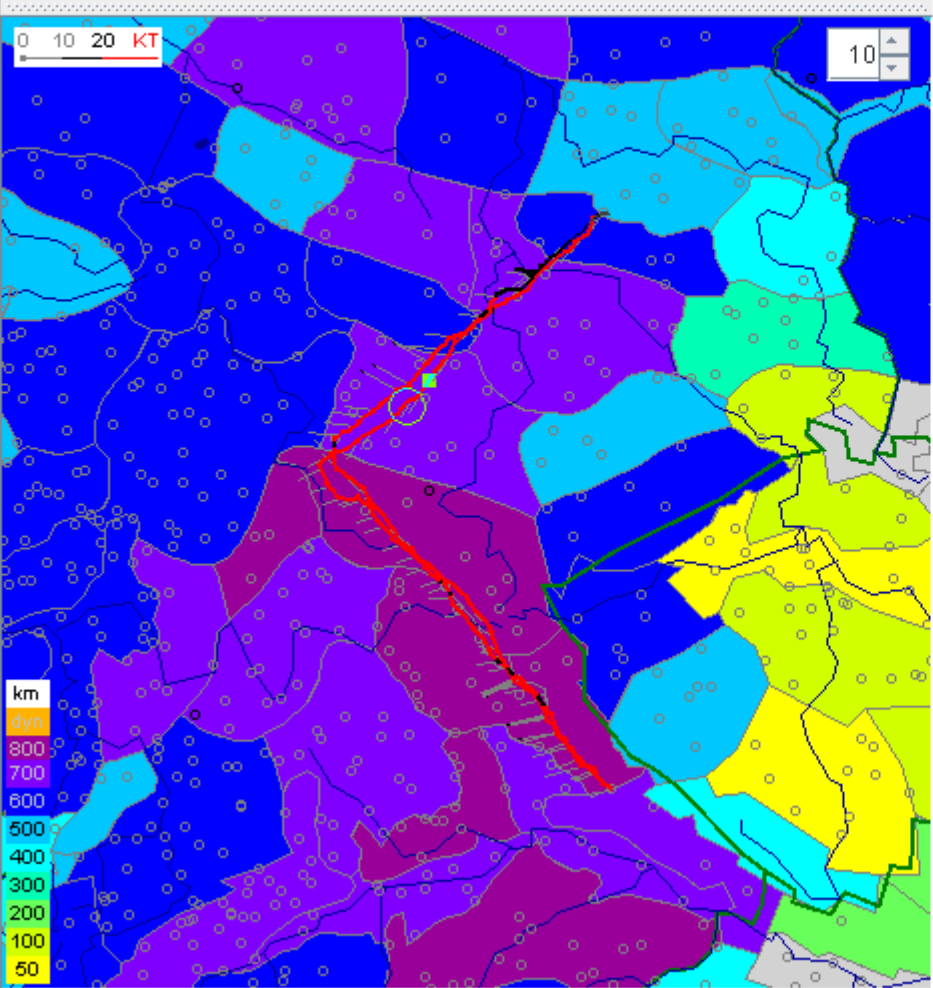


t: 15:30 z: 2000 050809 ASH\_25 D-kiga ofen



TOPTHERM Aufgabe Flug Karte Barogramm Einstellungen Info

A	911km	11:00-19:31	107km/h	985f1301.igc
F	992km	10:47-19:54	109km/h	985f1301.igc

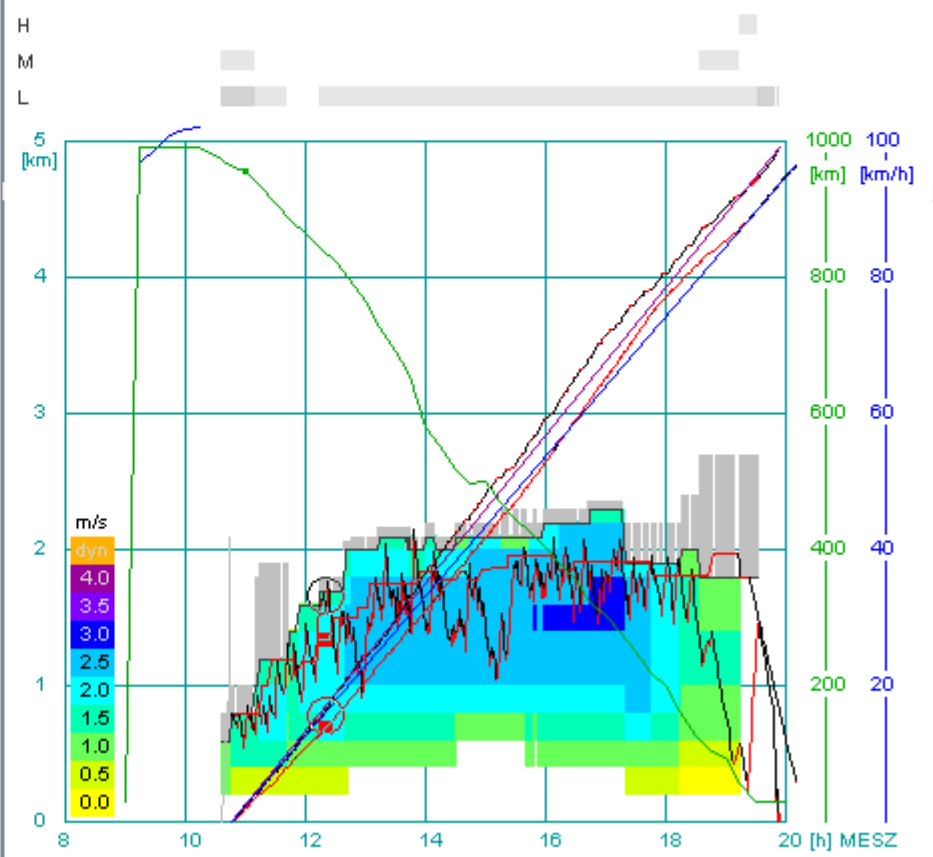


Mlada Boleslav (374)

TopTask

Flugzeug:  Index:  FB:  Polare:

Aufreibungen



t: 12:18 z: 1700 050809 ASH\_25 D-kiga ofen



# Summary

- **A weather browser provides convenient selfbriefing and task planning.**
- **The simulation of flights demonstrates the skill - and limits - of numerically predicted soaring weather.**
- **In 2009 an assimilation error showed up in COSMO-EU/TOPTHERM. It has been analyzed and fixed.**

**... thank you for your attention**

