

Wetternavigation mit OpenCPN TO - INTERMAR Seminar 02.03.2021

Wetterinformationen
Auf die Seekarte gebracht

Grundsätzliches

- Dieses Seminar ist ausdrücklich kein „Wetterseminar“ im eigentlichen Sinn.
- D.h. wir werden nur begrenzt auf generelle Wetterentwicklungen, bzw. Wettersysteme eingehen,
- sondern uns in der Hauptsache darauf konzentrieren, wie man Wetterinformationen erhalten kann,
- die Limitationen verschiedener Wettermodelle und
- wie man dies alles bei der Navigation an Bord einsetzen kann.

In der Hauptsache: Nutzung von Wetterinformationen unterstützt von OpenCPN

Gliederung

- Datenquellen an Land und unterwegs
- OpenCPN kurzer Überblick
- GRIB Plugin – Funktionen und Möglichkeiten
- Wetterfax Plugin – Funktionen und Möglichkeiten
- Climatology Plugin
- Aktuelle Wetterlage Nordatlantik – Intermar Wetter
- Weatherrouting Plugin (möglichst)

Vorführung „Real Live“

Datenquellen – Sammlung NOAA

Informationen für die Atlantiküberquerung (und weiter)...

- Satelliten DB: <https://aviationweather.gov/data/obs/sat/intl/>
(Atlantik immer "b1", "irbw" = infrarot schwarzweiß; "irnws" Regeninformation; "vis" "visible";
"wv" "Water Vapor")
- Analysekarte Lat. -20°/50°, Long. 0°/-160° alle 6 Std. 00Z; 06Z; 12Z; 18Z
Atl. Pac: https://www.nhc.noaa.gov/tafb/USA_00Z.gif
- Trop. Atlantik: <http://tgftp.nws.noaa.gov/fax/PYEB11.gif>
<http://tgftp.nws.noaa.gov/fax/PYEA11.gif>
- Nordatlantik: <http://tgftp.nws.noaa.gov/fax//QDTM86.TIF> (12:00 Folgetag)
<http://tgftp.nws.noaa.gov/fax/QDTM85.TIF> (00:00 = 24:00 Folgetag)
- NA-Aktuell: <http://tgftp.nws.noaa.gov/fax/PYAA11.TIF>
<http://tgftp.nws.noaa.gov/fax/PYAA12.TIF>
- Zugriff ges. DB : <http://tgftp.nws.noaa.gov/fax/>

Etwas über das Wetter lernen? – Vielleicht hier : <https://www.e-education.psu.edu/meteo3/>

GRIB Datenquellen

- **Saildocs.com**
 - Airmail - verschiedene atmosphärische Modelle und „moving GRIBs“
 - Winlink Express – GFS
- **OpenCPN GRIB-Plugin**
 - Über Standard E-Mail Programm – GFS
- **zyGRIB – GFS Limit 100MB**
- **xyGRIB – verschiedene atmosphärische und Wellenmodelle – Limit 50MB**

OpenCPN

- Vielseitiger Kartenplotter – frei verfügbar (www.opencpn.org)
- Fest eingebaute „Standardfunktionen“ (WMM, GRIB, Kartendownloads - auch von externen Quellen z.B. oeSENC)
- Erweiterte Funktionen über „Plugins“
- Wichtige wählbare Plugins:
 - Wetterfax
 - Climatology
 - Wetterrouting
 - Radar
 - Watchdog
 - Viele weitere ohne Wertung ...

Live Demonstration

- **GRIB** : Navigation, Wettertabelle, Geopot. Höhe, Datenrequest
- **Wetterfax**: Kartenkalibrierung (Mercator), Datenerfassung:
 - Internet
 - Funk
- **Climatology**: Pilot Charts, Zyklone
- **Wetterrouting**: Dateneingabe, Polare ...

Zusammenfassung

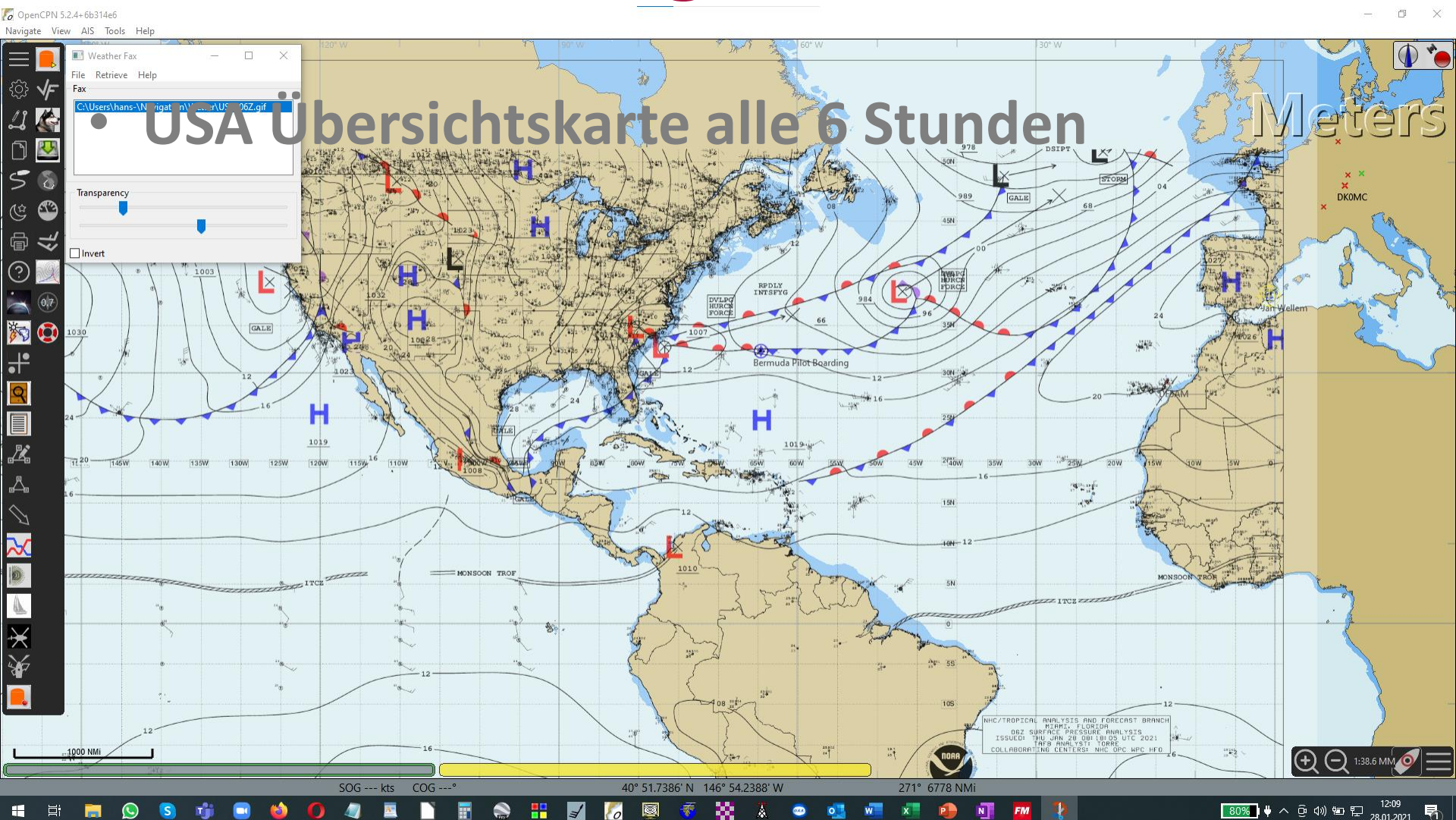
- OpenCPN als Tool für die Wetternavigation
- Funktionen der hierfür wichtigsten Plugins:
 - GRIB
 - Wetterfax
 - Climatology
 - Wetterrouting
- **Verfügbare Wetterdaten:**
 - Im Hafen Internet – zyGRIB, xyGRIB, lokale Wetterdienste und daten
 - Unterwegs über Airmail bzw. Winlink Express Kataloge und query@saildocs.com (GRIB)
- **Viel weitere optionale Plugins:**
 - „Watchdog“
 - „Draw“
 - Radar
 - ...

Fragen??? – Gute Reise(n)

Backupinformationen

- Die folgenden Folien (begrenzter Umfang) aus früherer Präsentation zur Veranschaulichung und auch ggf. falls die Demonstration nicht funktionieren sollte.

Nutzung der Tools



Nutzung der Tools

OpenCPN 5.2.4+6b314e6
 Navigate View AIS Tools Help

Weather Fax
 File Retrieve Help
 Fax
 C:\Users\hans-uwe\N\agat\AV\...US\26Z.gif
 NOA - Boston - JRF/ E/ ANALYSIS PART 1 NE -1-1
 NOAA - Boston - JRF/ EAN/ /... 2 NW -1-1

Transparency
 Invert

Internet Retrieval
 S... Server Region Contents
 NOAA Boston 96HR WAVE PERIOD FORECAST VT12Z
 NOAA Boston PRELIM SURFACE ANALYSIS 00-18Z
 NOAA Boston SURFACE ANALYSIS PART 1 NE 00-18Z
 NOAA Boston SURFACE ANALYSIS PART 2 NW 00-18Z
 NOAA Boston 24HR SURFACE FORECAST VT00/12Z

Retrieve
 Scheduled Selected X All None
 Lat Lon
 Boat Position Reset

Servers
 NOAA
 NOAA OPC
 OPC
 Aviation W
 German We
 UK MET

Regions
 Boston
 Pt. Reyes
 New Orleans
 Kodiak Alaska
 Honolulu Hawa
 All None
 Close

ATLANTIC SURFACE ANALYSIS
 ISSUED: 08:43 UTC 28 JAN 2021
 VALID: 06:00 UTC 28 JAN 2021
 CSTR: NOLT
 SOURCES: OPC NHC WPC

USA Übersichtskarte alle 6 Stunden + NOAA-Alerts

Forecast

ATLANTIC SURFACE ANALYSIS
 ISSUED: 08:43 UTC 28 JAN 2021
 VALID: 06:00 UTC 28 JAN 2021
 CSTR: NOLT
 SOURCES: OPC NHC WPC

FORECAST TRACKS ARE FOR VALID TIME + 24 HOURS.
 WARNING LABELS ARE FOR HIGHEST CONDITIONS FROM
 VALID TIME THROUGH 24

SOG --- kts COG ---°
 39° 23.5721' N 032° 17.3638' W 273° 1483 NMI

Nutzung der Tools

OpenCPN 5.2.4+6b314e6

Navigate View AIS Tools Help

Weather Fax

File Retrieve Help

Fax

C:\Users\hans-w... \Desktop\Wetter\US_0003
 NOAA - Boston - JRF2 - E - NA - IS - AR - T - NE - D - 18
 NOAA - Boston - JRF2 - E - AL - Y - ART - NW - D - 18
 German Weather DWD - European - Surface Anlys(4m)

Transparency

Invert

Internet Retrieval

| S... | Server | Region | Contents | Map |
|--------------------------|--------------------|----------|--------------------|------|
| <input type="checkbox"/> | German Weather DWD | European | Surface Anlys(4mb) | 40N- |
| <input type="checkbox"/> | German Weather DWD | European | 24hr Forecast | 40N- |
| <input type="checkbox"/> | German Weather DWD | European | 36hr Forecast | 40N- |
| <input type="checkbox"/> | German Weather DWD | European | 48hr Forecast | 40N- |
| <input type="checkbox"/> | German Weather DWD | European | 60hr Forecast | 40N- |

Retrieve

Scheduled Selected X

Lat

Lon

Boat Position Reset

Servers

Regions

European

All None

NOAA
 NOAA OPC
 OPC
 Aviation W
 German W
 UK MET

All None

Close

Weather analysis map on Mercator projection. The map shows pressure contours (1025, 1020, 1015, 1010, 1005, 1000, 995, 990, 985, 980) and fronts (red and blue lines with triangles). A large low-pressure system (L) is centered over the North Sea, with a high-pressure system (H) to its east. The map is overlaid on a Mercator projection of the North Atlantic and Europe.

1000 NM

Bermuda Pilot Boarding

OSAM

Matina Didra

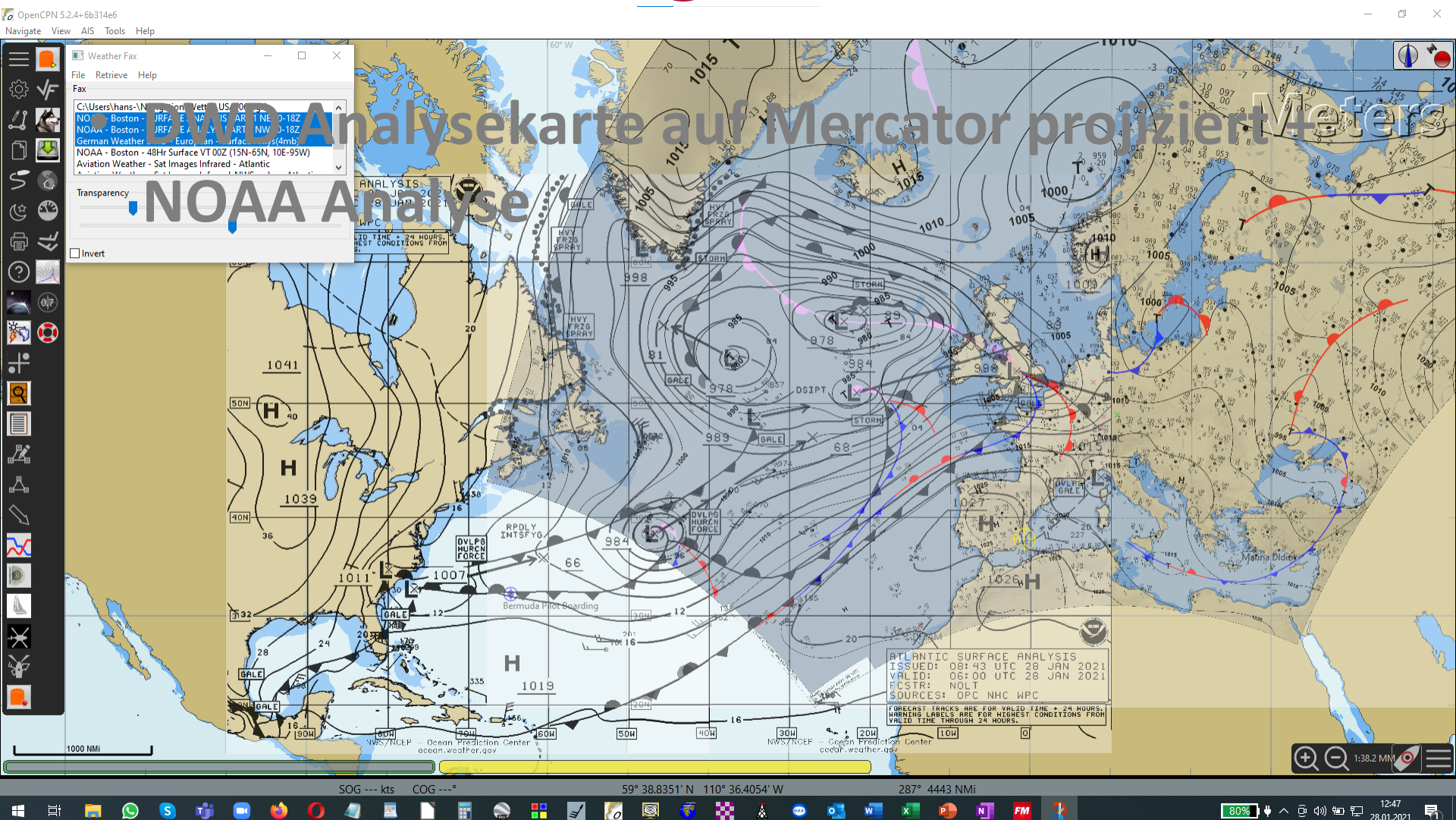
14:21 MN

SOG --- kts COG ---°

27° 13.4686' N 004° 27.9191' E

158° 695 NMI

Nutzung der Tools



Nutzung der Tools

OpenCPN 5.2.4+6b314e6
 Navigate View AIS Tools Help

Weather Fax

File Retrieve Help

Fax

C:\Users\hans-uw\... NOAA - Boston - 48Hr Surface VT 00Z (15N-65N, 10E-95W)

Transparency

Invert

48-HOUR SURFACE FORECAST
 ISSUED: 05:02 UTC 28 JAN 2021
 VALID: 00:00 UTC 30 JAN 2021
 FSR: NO T

Internet Retrieval

| S... | Server | Region | Contents |
|--------------------------|--------|--------|--|
| <input type="checkbox"/> | NOAA | Boston | SURFACE ANALYSIS PART 2 NW 00-18Z |
| <input type="checkbox"/> | NOAA | Boston | 24HR SURFACE FORECAST VT00/12Z |
| <input type="checkbox"/> | NOAA | Boston | 48HR SURFACE FORECAST VT00/12Z |
| <input type="checkbox"/> | NOAA | Boston | 48Hr Surface VT 12Z (15N-65N, 10E-95W) |
| <input type="checkbox"/> | NOAA | Boston | 48Hr Surface VT 00Z (15N-65N, 10E-95W) |

Retrieve: Scheduled Selected X

Servers: All None

Regions: Boston Pt. Reyes New Orleans Kodiak Alaska Honolulu Hawa

All None

Close

NOAA Nordatlantik Vorhersage alle 12 Std

1000 NMI

NWS/NOAA Ocean Prediction Center

SOG --- kts COG ---°

26° 19.1192' N 035° 34.7687' W 248° 1901 NMI

Nutzung der Tools

Nutzung der Tools

OpenCPN 5.2.4+6b314e6

Navigate View AIS Tools Help

Weather Fax

File Retrieve Help

Fax

- C:\Users\hans-... \ation\Wetter\USA_06Z.gi
- NOAA - Boston - IRFAC - AL 03 F 1 0 1
- NOAA - Boston - SUR - AC - AL SF - N 0 1
- German Weather - ... - ... - ... - ...
- NOAA - Boston - 48Hr Surface VT 00Z (15N-65N, 10E-5
- Aviation Weather - Sat Images Infrared - Atlantic

Transparency

Invert

Internet Retrieval

| S... | Server | Region | Contents |
|--------------------------|------------------|---------------------|-------------------------|
| <input type="checkbox"/> | Aviation Weather | Sat Images Infrared | Americas |
| <input type="checkbox"/> | Aviation Weather | Sat Images Infrared | Atlantic |
| <input type="checkbox"/> | Aviation Weather | Sat Images Infrared | Europe Africa |
| <input type="checkbox"/> | Aviation Weather | Sat Images Infrared | Europe Africa Asia |
| <input type="checkbox"/> | Aviation Weather | Sat Images Infrared | Indian Ocean and Oce... |

Retrieve

Scheduled Selected X All None

Lat

Lon

Boat Position Reset

Servers

- NOAA
- NOAA OPC
- OPC
- Aviation W...
- German We
- UK MET

Regions

- Sat Images I
- Sat Images II
- Sat Images III
- Sat Images V
- Sat Images V

All None

Close

1100 UTC Thu 28 Jan 2021

ATLANTIC SURFACE ANALYSIS
ISSUED: 08:43 UTC 28 JAN 2021
VALID: 06:00 UTC 28 JAN 2021
PSTR: NOLT
SRCS: OPC NHC WH

24° 58.5336' N 010° 57.7576' W 213° 940 NMI

Nutzung der Tools

The screenshot shows the OpenCPN interface with a weather map of the North Atlantic. The map displays pressure systems, wind vectors, and wave heights. Several tool windows are open:

- Weather Fax:** A window for retrieving weather data, showing a list of sources like 'NOAA - Boston - Surface Analysis' and 'Aviation Weather - Sat Images Infrared - Atlantic'.
- Internet Retrieval:** A window for selecting data sources by region, with 'Sat Images I' selected under the 'Americas' region.
- Forecast Tracks:** A text box at the top center stating: "FORECAST TRACKS ARE FOR VALID TIME + 24 HOURS. WARNING LABELS ARE FOR HIGHEST CONDITIONS FROM VALID TIME THROUGH 24 HOURS."
- Atlantic Surface Analysis:** A text box at the bottom right providing details: "ATLANTIC SURFACE ANALYSIS. ISSUED: 08:43 UTC 28 JAN 2021. VALID: 06:00 UTC 28 JAN 2021. PSTR: NOLT. SOURCES: OPC NHC W..."

The map shows a high-pressure system (H) over the North Atlantic and a low-pressure system (L) over the Caribbean. Wind vectors indicate a storm system moving across the Atlantic. Wave heights are shown in meters, with some areas reaching up to 10 meters. The status bar at the bottom shows coordinates: 13° 51.0577' N, 036° 56.8791' W, and a distance of 233° 2417 NMi.

Nutzung der Tools

The screenshot shows the OpenCPN interface with a satellite weather map. The map displays cloud cover and precipitation intensity over the Atlantic and Europe. Two windows are open:

- Weather Fax:** A window for retrieving weather data. It shows a list of servers and a 'Retrieve' section with buttons for 'Scheduled', 'Selected', and 'X'. There are also input fields for 'Lat' and 'Lon', and a 'Boat Position' button.
- Internet Retrieval:** A window for selecting servers and regions. It has a table with columns for 'Server', 'Region', and 'Contents'. The 'Server' column lists 'Aviation Weather' and 'NOAA'. The 'Region' column lists 'Americas', 'Atlantic', 'Europe Afri', and 'Indian Oce'. The 'Contents' column lists 'Sat Images Infrared-NWS-color', 'Sat Images I', 'Sat Images II', 'Sat Images V', and 'Sat Images V'. There are 'All', 'None', and 'Close' buttons.

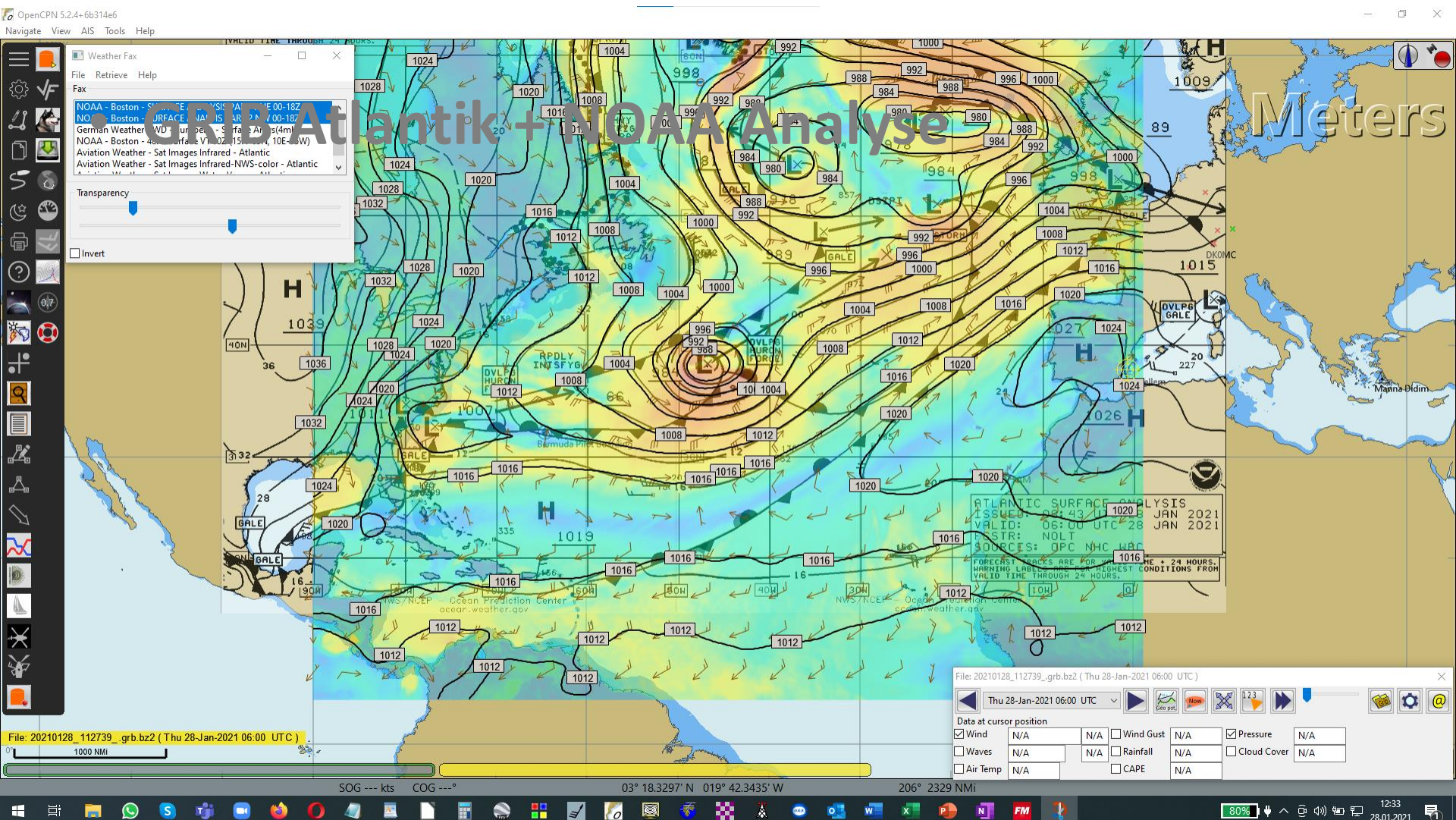
The map itself shows a satellite image with NWS (Regen) precipitation data overlaid. The precipitation is shown in shades of blue and yellow, indicating intensity. The map also shows cloud cover in shades of green and yellow. The text 'Satitenbild - NWS (Regen)' is overlaid on the map. The text 'Meters' is also visible on the right side of the map. The bottom status bar shows the current position: 26° 17.6554' N 028° 21.1564' W, 243° 1567 NMI, and a speed of 1:16.9 MM.

Nutzung der Tools

Nutzung der Tools

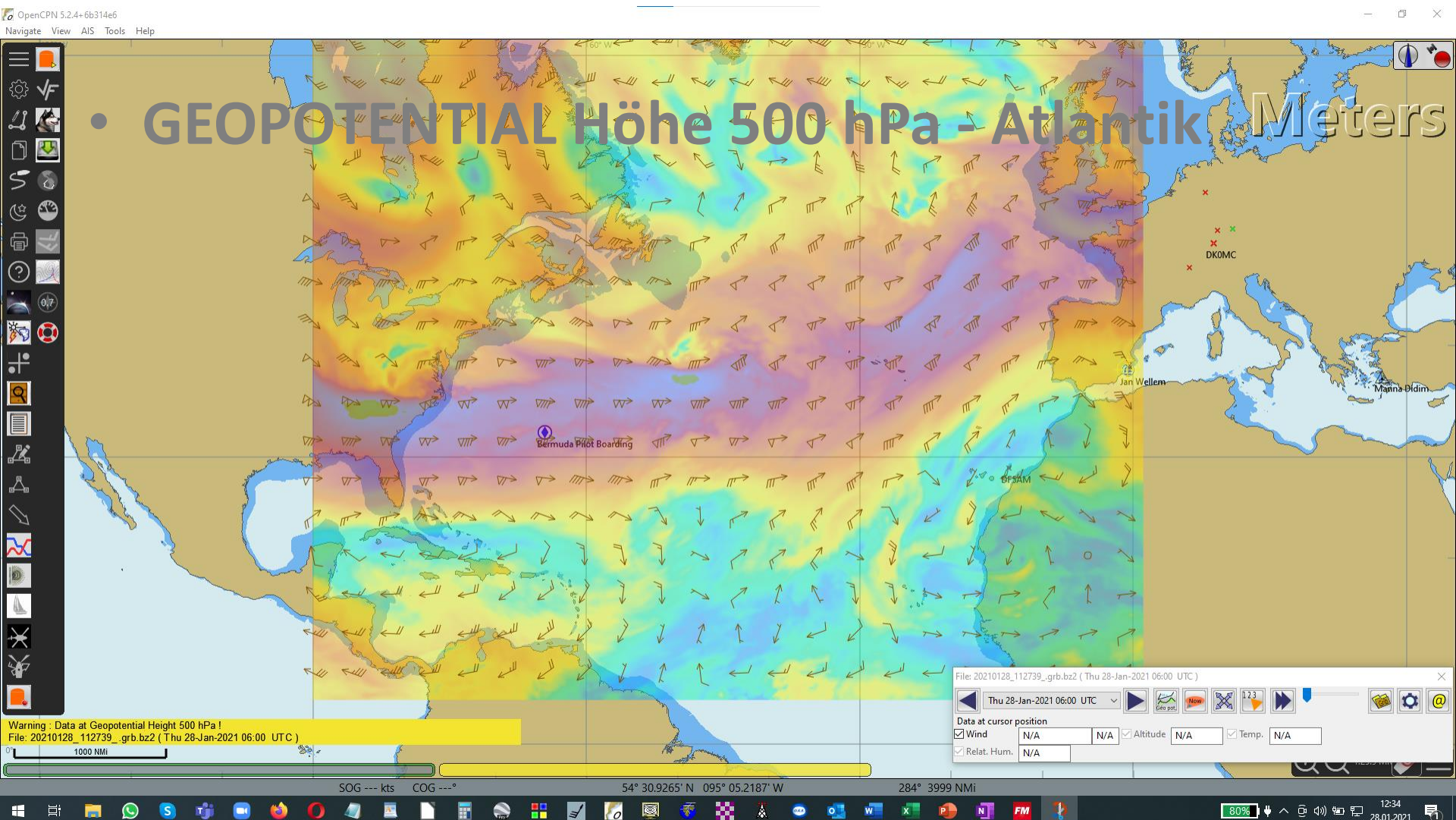
The screenshot displays the OpenCPN interface with a weather map of the Mediterranean region. A 'Weather Fax' window is open in the top-left corner, showing a list of data sources including NOAA and German Weather DWD. A 'DWD' logo is prominently displayed in the center of the map area. A 'Data at cursor position' window is open in the bottom-right corner, showing various weather parameters such as Wind, Waves, Air Temp, and Pressure. The map includes isobars, wind vectors, and a color-coded temperature overlay. The status bar at the bottom shows coordinates and other navigation data.

Nutzung der Tools



Nutzung der Tools

• GEOPOTENTIAL Höhe 500 hPa - Atlantik Meters



TO-RHT Routen / Forecast Areas

