# Nouvelles données et services offerts à la communauté par le CDPP

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The French Plasma Physics Data Centre (CDPP, http://www.cdpp.eu/ ) addresses for nearly 20 years all issues pertaining to natural plasma data distribution and valorization. The CDPP is involved in the development of interoperability (IVOA, IPDA, SPASE) and participated in several Virtual Observatory projects (Europlanet, Helio, Vispanet, IMPEx). **This poster presents AMDA, a flexible and attractive online tool, which allows the user to combine and plot data from heterogeneous sources**
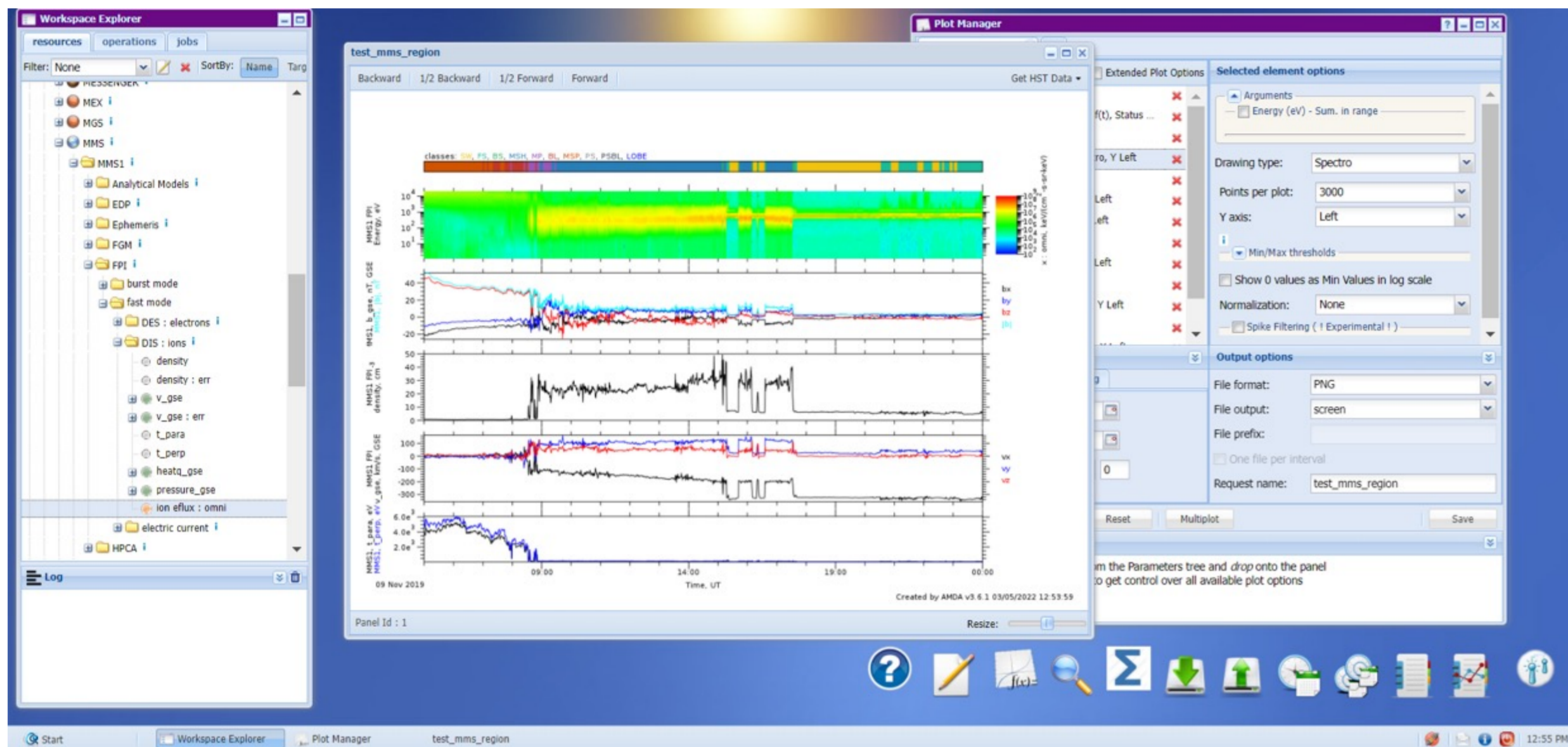
## Automated Multi-Dataset Analysis
### In-situ database and analysis tool

## https://amda.cdpp.eu

Register at amda@irap.omp.eu
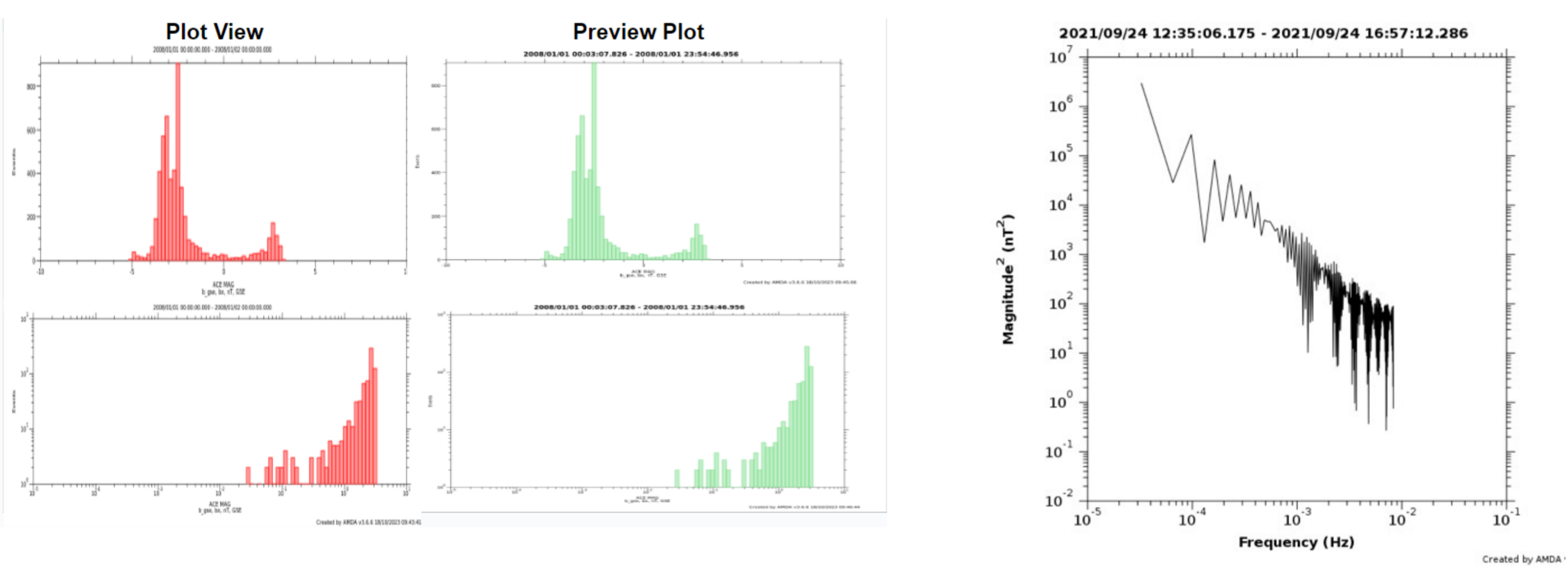
# AMDA new functionalities

## A few examples

### Spike Filtering
The user can remove spike in time-series Data.
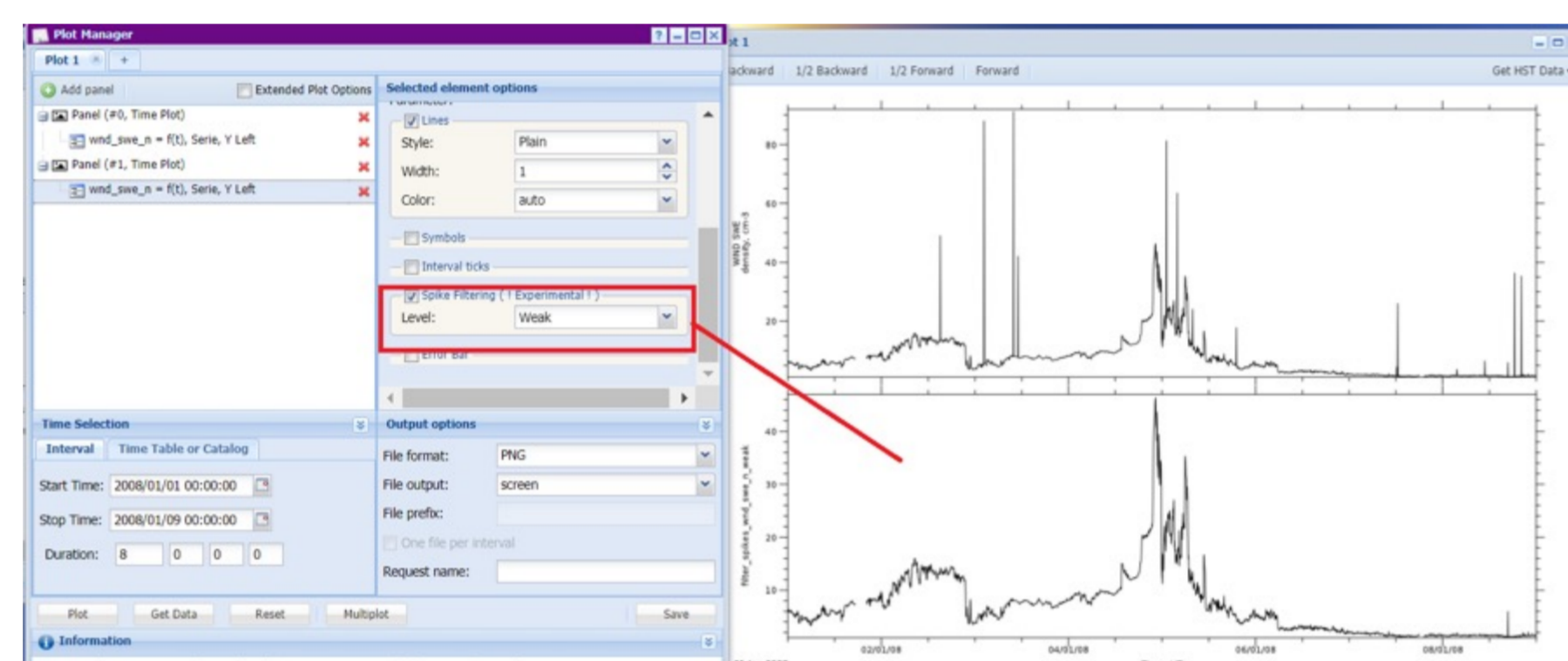
### FFT
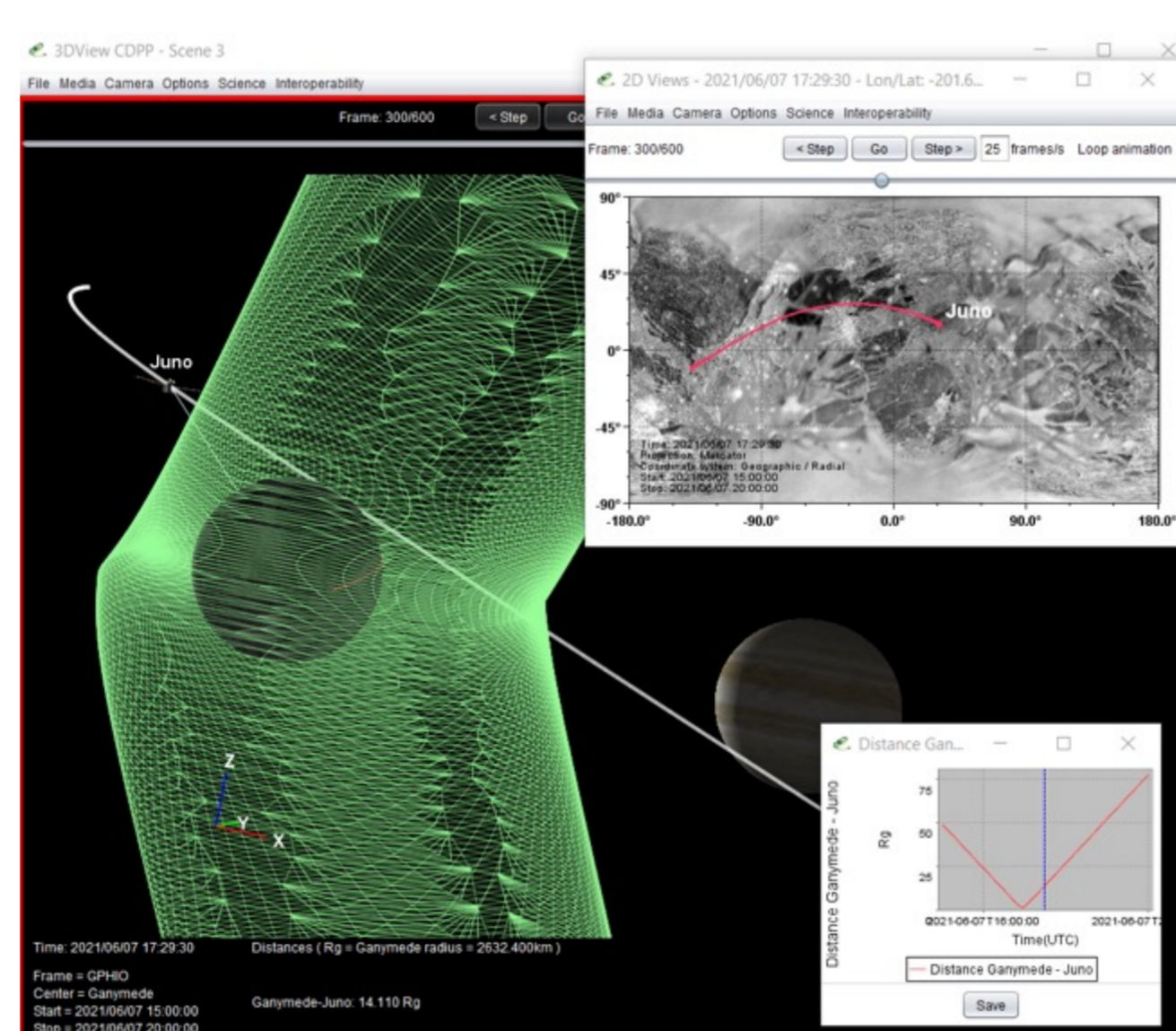The user can perform FFT on selected time windows.

### 1D Histogram


Plot View / Preview Plot

# 3DView

## 3DView

**A 3D orbit/conjunction viewer displaying science data and models**

## http://3dview.cdpp.eu

# In-situ database

### More than 80 missions and 800 datasets

### Fully described in the SPASE data model
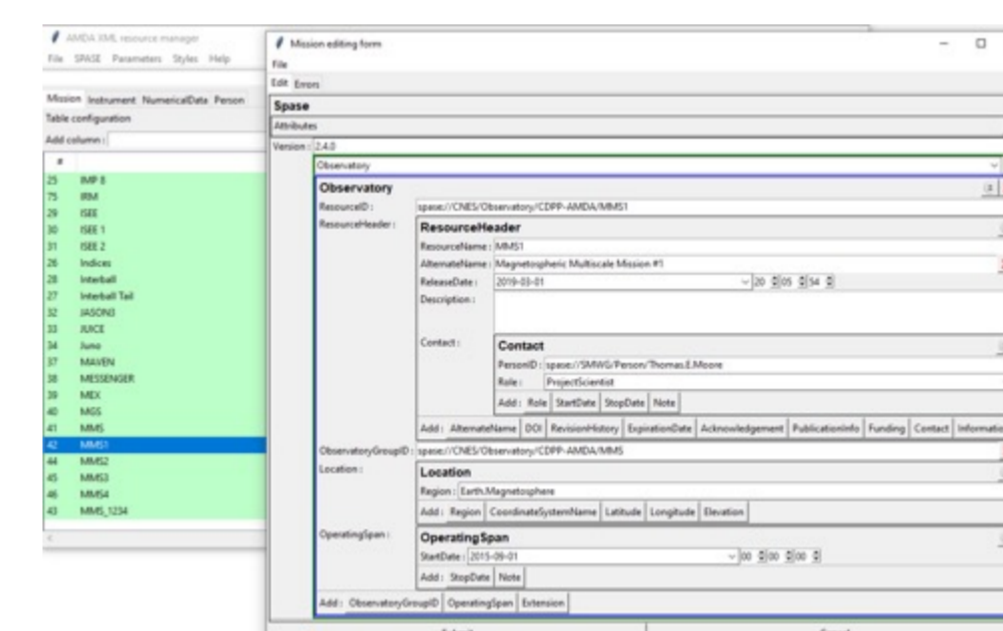
**ACE:** MFI, SWEPAM
**DSCOVR:** MAG, Faraday Cup
**ISEE:** FGM, FVA
**OMNI**
**WIND:** MFI, SWE
**STEREO:** HET, LET, MAG, PLASTIC, SEPT, SIT, SWEA

**Solar Orbiter:** EPD, MAG, SWA, RPW
**Parker Solar Probe:** FIELDS, SWEAP, ISOIS
**Solar Irradiance:** FERMI (LAT), TIMED (SEE)

**Bepi Colombo:** MPPE (L1 only)
**MESSENGER:** MAG, FIPS, EPS
**Mariner 10:** MAG, PLS

**Venus-Express:** ELS, IMA, MAG
**PVO:** MAG

**MMS:** EDP, FGM, FPI, HPCA
**THEMIS:** ESA, FGM
**ARTEMIS:** ESA, FGM
**Cluster:** CODIF, HIA, EFW, FGM, PEACE, STAFF, WHISPER
**Geotail:** CPI, EFD, EPIC, LEP, MGF
**Double Star:** FGM, HIA
**AMPTE:** CCE, IRM, & UKS
**EISCAT:** ESR 32M, ESR 42M, UHF, VHF
**JASON3:** AMBRE
**Swarm:** GNSS, EFI/LP, ASM/VFM, EFI/TII
**Indices:** DST, AE, AL, SME, SML, …
**Freja:** ESP, MFE
**IMP-8:** MAG, MIT
**Interball Tail:** Corall, DOK2, MIF-M
**Polar:** HYDRA, MFE

**MAVEN:** EUV, LPW, MAG, NGIMS, SEP, STATIC, SWEA, SWIA
**Mars-Express:** ELS, IMA, MARSIS
**MGS:** ER, MAG, Proxy
**Phobos-2:** ASPERA, MAG

**JUNO:** FGM, JADE, JEDI, WAVES, JEDI
**JUICE:** CReMA
**Galileo:** EPD, MAG, PLS, PWS

**Rosetta:** AUX, IES, LAP, MAG, MIP, ROSINA
**Giotto:** IMS, JPA, MAG, RPA
**ICE:** MAG

**Cassini:** CAPS, MAG, MIMI-LEMMS, RPWS

**Helios:** AUX, E1, E3, MAG
**Pioneer 10&11:** CPI, CRT, GTT, MAG
**Astronomical Objects Ephemerides**
**Planets Properties**
**Magnetic Field Models:** T96, Morschhauser, Cain, JRM09
**Solar Wind Propagation Models**
**Ulysses:** FGM, SWICS, SWOOPS, URAP
**Voyager 1&2:** CRS, LECP, MAG, PLS, PWS

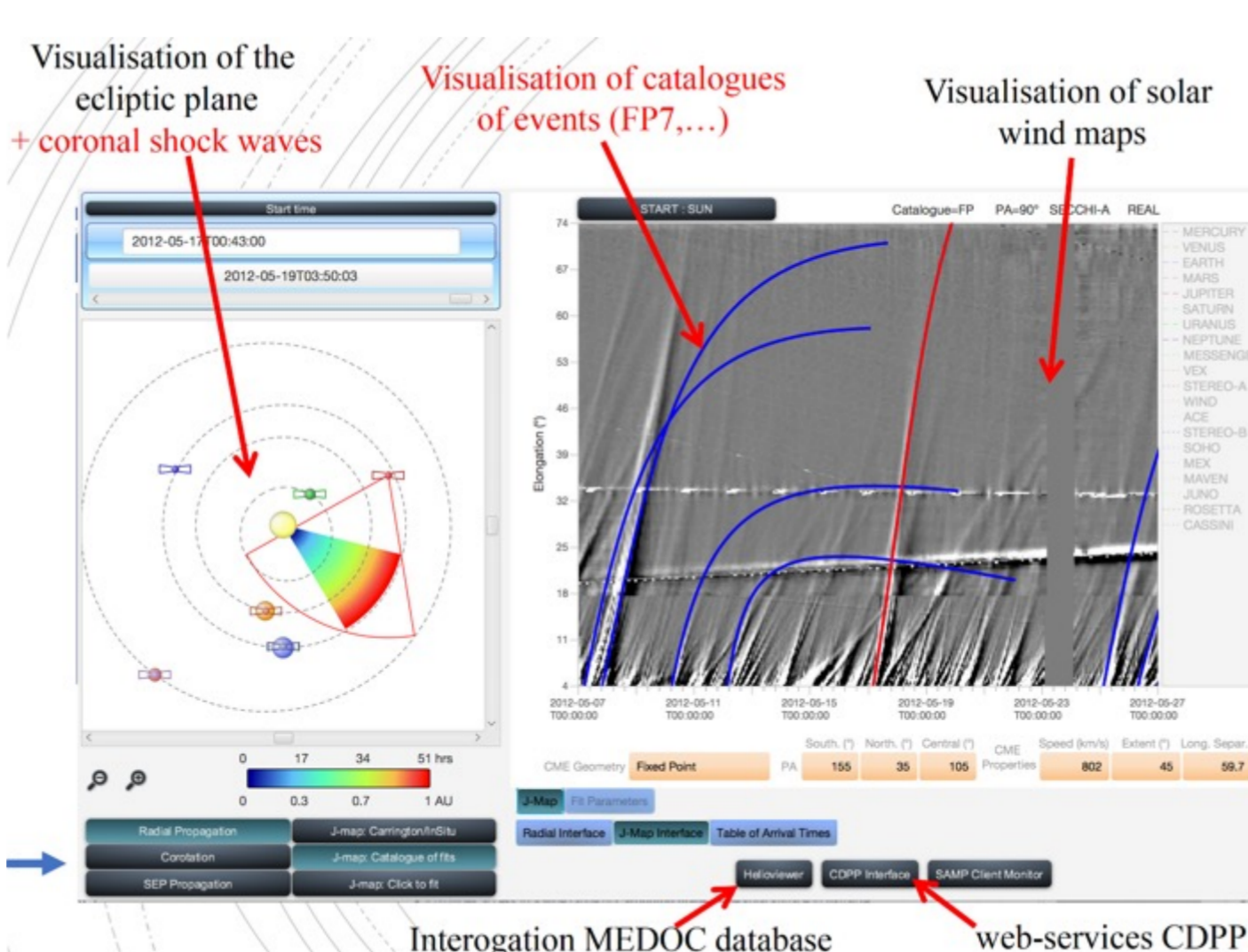Mercury / Venus / Earth / Mars / Jupiter / Saturn / Uranus / Neptune

**AMDA** has been integrated in the **Space Weather Service Network** of the European Space Agency.
AMDA data can also be accessed through our **HAPI server**.

# Propagation Tool

## Propagation Tool

**A tool to track solar storms, streams and energetic particles in the heliosphere**

## http://propagationtool.cdpp.eu

Visualisation of the ecliptic plane + coronal shock waves
Visualisation of catalogues of events (FP7,…)
Visualisation of solar wind maps

Interrogation MEDOC database / web-services CDPP

# Data from simulations and models

**Compare models**, derived from MHD and hybrid codes (from LATMOS and FMI) and analytical paraboloid models (from SINP) for the magnetic field, **with the observational data** (**ANR TEMPETE**).

Run routinely and expose the results of the 1D MHD **solar wind propagation model** (Tao et al. 2005).

# Python & Machine Learning

Access AMDA data in Python with Speasy module & view predictions produced by machine learning algorithms in AMDA:
**SciQLop: Simplifying In-Situ Space Physics Data Analysis**
*Alexis JEANDET et al.*

Use AMDA for a Machine Learning study:
**Development of Machine Learning Techniques at CDPP for Event Detection in Multivariate Time Series Data**
*Menouar AZIB et al.*