

The PITHIA e-Science Centre



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PITHIA-NRF:

Plasmasphere Ionosphere Thermosphere Integrated Research Environment and Access services: a Network of Research Facilities

Project funded by the European Commission's H2020 Programme

Build a network of research facilities that specifically supports the research community related to the study of the Earth's ionosphere, thermosphere and plasmasphere

PITHIA e-Science Centre (PeSC):

A central web portal to provide a single point of entry to heterogenous and distributed resources (Data Collections and Catalogues)

Describe, publish and search Data Collections (datasets or prediction models) based on a rich set of metadata based on the ISO 19156 standard on observations and measurements, and a Space Physics Ontology

e-Science Centre to find and interact with Data Collection

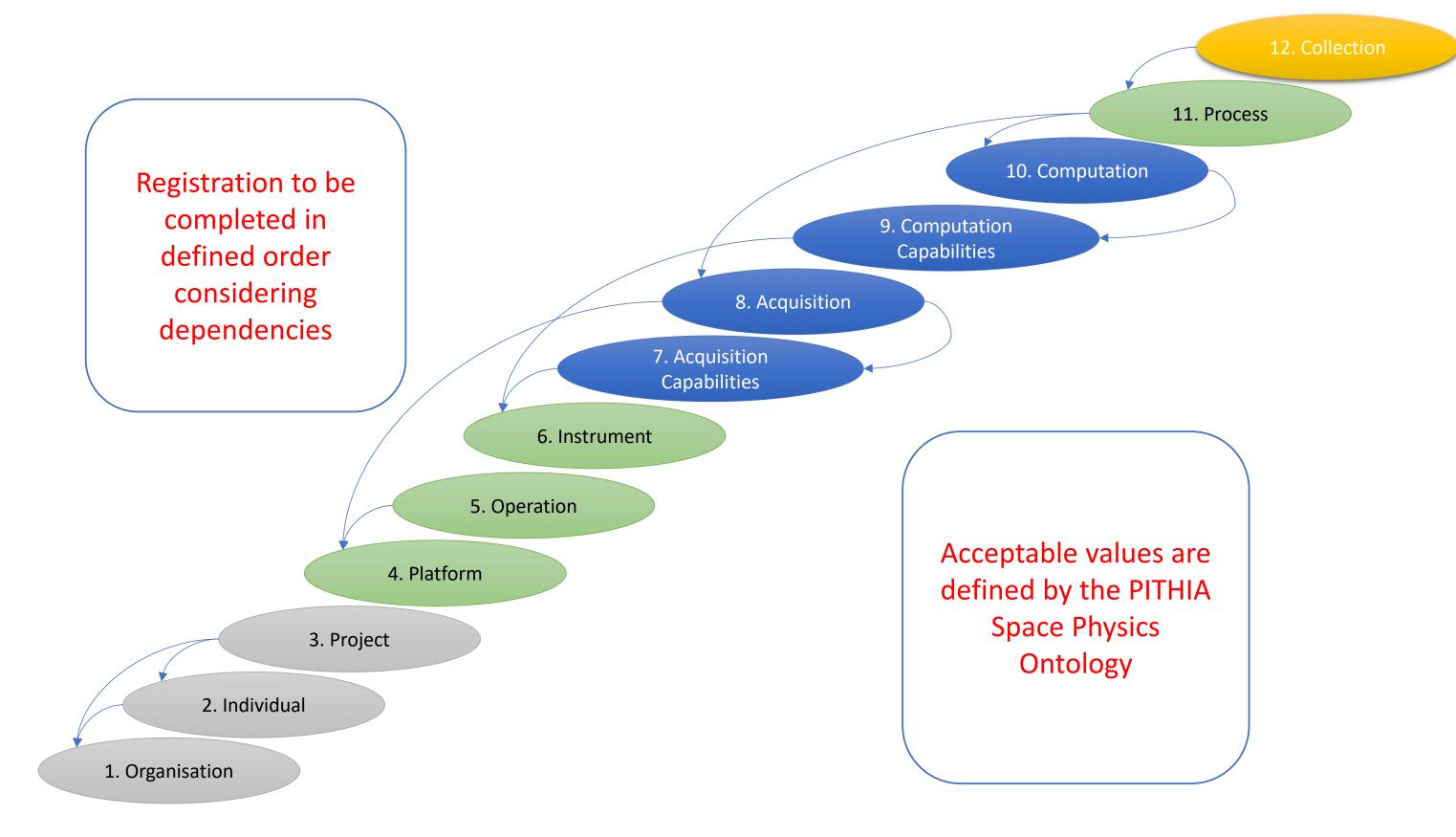


Data collection publication with standardised metadata and ontology



Home

PITHIA-NRF e-Science Centre Search & Browse Metadata := **i**≡ 888 Search Data Collections Data Collection Simple Browse Data Collections Browse Catalogues Browse Metadata Search by Content Space Physics Ontology A ሔ Space Physics Ontology Space Physics Ontology Guide Data Registration A $\left(\cdot \right)$ ി Data Resource Register & Manage Metadata Models Metadata Registration Guide



Main PeSC functionalities:

Ontology-based search of Data Collections by content

How to interact with Data Collections?

Return a link and direct the user to the external site of the Data

- Searching data collections by free-text
- Browsing Data Collection and Catalogues
- Browsing and seeing examples of the Registered metadata
- Exploring the Space Physics ontology

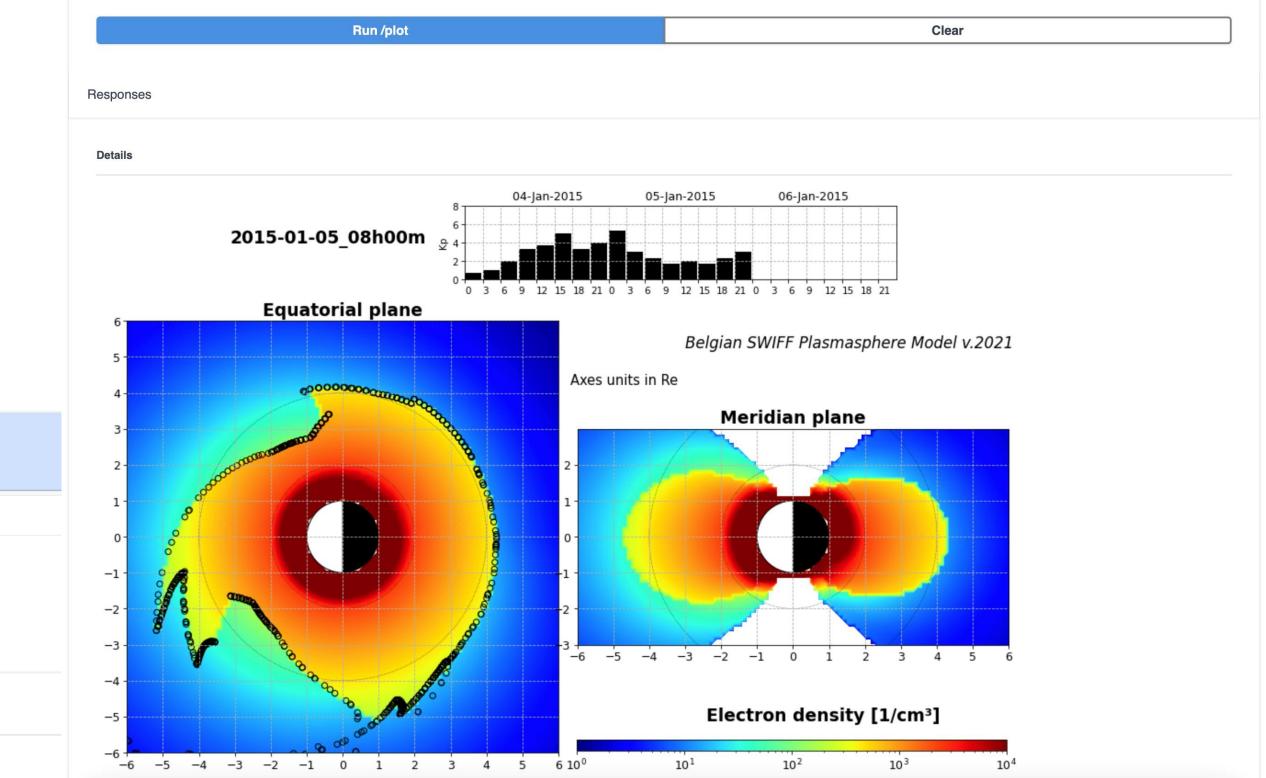
Collection

- \succ Generate a Graphical User Interface automatically in the PeSC based on the API of the Data Collection
- \succ Dynamically deploy Data Collection in the Cloud (coming soon)

An example: BSPM – 3D Kinetic Plasmasphere Model

Semiempirical model of the plasmasphere developed by the Solar Wind Division of the Royal Belgian Institute for Space Aeronomy Provides the number density and the temperature of the electrons and protons inside and outside the plasmasphere, as well as the position of the plasmapause, as a function of the geomagnetic activity driven by the Kp index. Deployed on the EGI Cloud - executed from the PeSC via API

BSPM API: 3D-Kinetic plasmasphere model s a 3D-Kinetic semiempirical model of the plasmasphere developed by the Solar Wind Division of the Royal Belgian Institute for Space Aeronomy Start typing to filter sections Run/Returns the status of execution id: vear-month-d



Execute the BSPM by passing the date.	\checkmark	5-
Retrieve Executions Returns a list of executions completed by the user		4 3
Retrieve a list of user executions.	Execute Run/Returns the status of execution id: year-month-day	2-
Plot Returns the plot image	Execute the BSPM by passing the date.	0-
Plot the output image by passing the execution id and hour.	Returns the status of execution id: year-month-day	-1 - -2 -
Download Returns the ZIP file of all outputs, including .png and .csv files.	Parameters	-3
Download all the outputs by passing the execution id.	Name Description	-5 -
	date * requiredDate in the format 'YYYY-MM-DD'string (query)2015-01-05	-6 - -6
	Responses	
	Details	
	<pre>{ "code": 1, "msg": "App BSPM_May2023.py with execution ID 2015-01-05 is completed.", "id": "2015-01-05", "status": "completed" }</pre>	

More information:

Visit the e-Science Centre: https://esc.pithia.eu/

Visit the PITHIA NRF Website: https://pithia-nrf.eu/

Watch our video:



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