



# Small Bodies and Dust Node: Science and Tools

M. Cristina De Sanctis and the SBDN Team

Istituto di Astrofisica Spaziale e Fisica Cosmica-INAF Rome, Italy (mariacristina.desanctis@iasf-roma.inaf.it)

## Abstract

The “Small Bodies and Dust Node” is part of the EUROPLANET IDIS network. IDIS is an integrated and distributed information service, that will provide remote access to data produced by space missions, ground-based telescopes, laboratory and field facilities, sample collections, and will give additional tools to use, combine, analyse the data, and compare them to numerical simulation and model predictions.

The Small Bodies and Dust Node portal will evolve towards an information access system providing interoperability of a wide range of different information and data sources and access tools, located in different data centers, including virtual observatory-like access services to data sets.

## 1. Introduction

The “Small Bodies and Dust Node” is part of the EUROPLANET IDIS network. The SBDN is developed and maintained in the framework of the IDIS of FP6 and FP7. IDIS is composed by a Service activity and a Joint Research activity. The Service Activity is structured in five thematic Nodes and a Technical Node.

All IDIS information can be accessed through EuroPlaNet website or, for advanced searches, via web-services available at 5 different thematic nodes located in different European countries and maintained under the responsibility of separate institutions. Each node deals with a subset of the disciplines related to planetary sciences and, working in cooperation with international experts in these fields, provides information to the international planetary science community.

The SBDN thematic science node is hosted by the Istituto di Fisica dello Spazio Interplanetario (INAF) and is established in close cooperation with the

Istituto di Astrofisica Spaziale (INAF). The “**Small Bodies and Dust Node**” (SBDN) web address is:

<http://www.idis-sbdn.euoplanet-ri.eu>

## 2. Small Bodies and Dust Node

The IDIS Small Bodies and Dust Node (SBDN) aims at becoming a focus point in the fields of Solar System's minor bodies and interplanetary dust by providing the community with a central, user friendly resource and service inventory and contact point. The main aim of the Small Bodies and Dust Node is to:

- Support collaborative work in the field of Small Bodies and Dust;
- Provide information about databases and scientific tools in this field;
- Establish a scientific information management system;

The Science fields covered by the SBDN are the following: Experimental, theoretical, observations (ground based and space based) of comets, asteroids and interplanetary dust. In particular, the Solar System objects pertaining to this node are: *Comets, Asteroids, KBOs, Rings, Centaurs, Meteors, Meteorites, Irregular satellites, Satellites, Dust (IPD, Cometary dust, zodiacal dust)*.

The SBDN will permit the access to different Laboratory data, such as Spectra, Emissivity, Optical constants, Physical (thermal, mechanical, structural), and Mineralogical data. Moreover, Access to following data bases is foreseen:

- *Dynamical database (asteroids and comets)*
- *Asteroid families*

- *Spectral database of observations and laboratory data*
- *Photometric database (lightcurves, albedo)*
- *Physical data base (diameters, taxonomy)*
- *Space observations data*
- *Meteorites collections*

The node aim is to help the researchers to easily find and locate resources for their projects, to get data and useful related software for data analysis, to establish new cooperation with other researchers.

### **3. Planetary Virtual Observatories**

Astrophysical VOs are already quite advanced meanwhile Planetary VOs are just beginning due to the multiplicity of of data types and scientific disciplines in planetary sciences. One of the main points of IDIS is to support the development of VO tools and services , defining data models and standards. The final aim is to permit to IDIS Nodes to evolve in Planetary Virtual Observatories.

The SBDN has yet the *Virtual Meteor Observatory*. ***The Virtual Meteor Observatory (VMO)*** is a Virtual Observatory-compatible database for meteor science, providing the astronomical community with online access to data resources from professional and amateur meteor observing efforts. This includes meteor orbits, light curves, spectra and fluxes obtained using optical, visual and radio techniques. The VMO is compatible with the Virtual Observatory standards. This allows other software tools and databases to be compatible.

### **Acknowledgements**

IDIS is supported by the European Commission's 7th Framework Program, Europlanet Research Infrastructure, grant agreement 228319, as part of the Capacities Specific Programme / Research Infrastructures.