

# VisIVO a tool for the Virtual Observatory and Grid environment

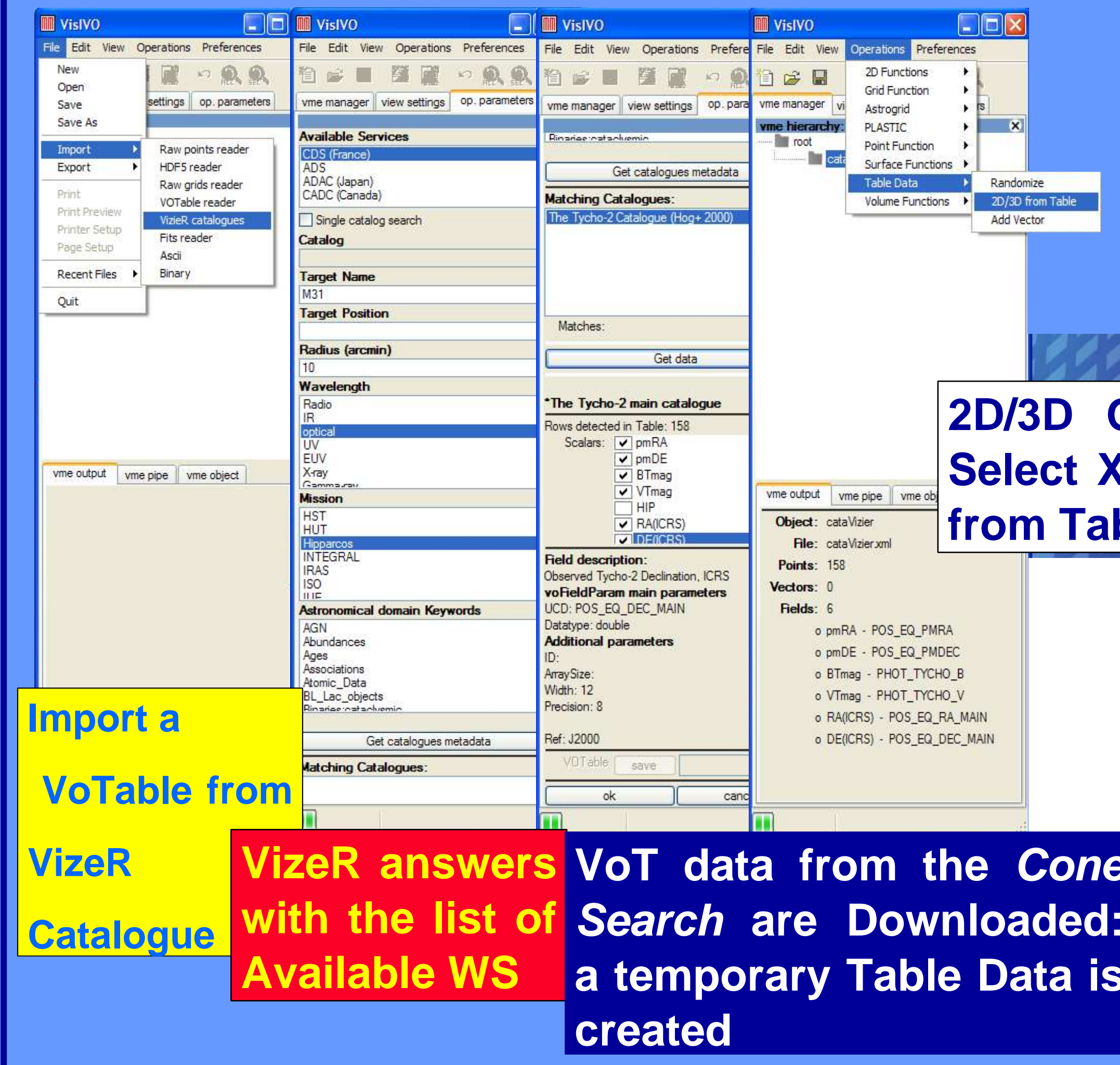
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VisIVO is a package for supporting the visualization and analysis of astrophysical multi-dimensional data. It is VO standards compliant and supports the most important astronomical data formats such as FITS, HDF5 and VOTables.

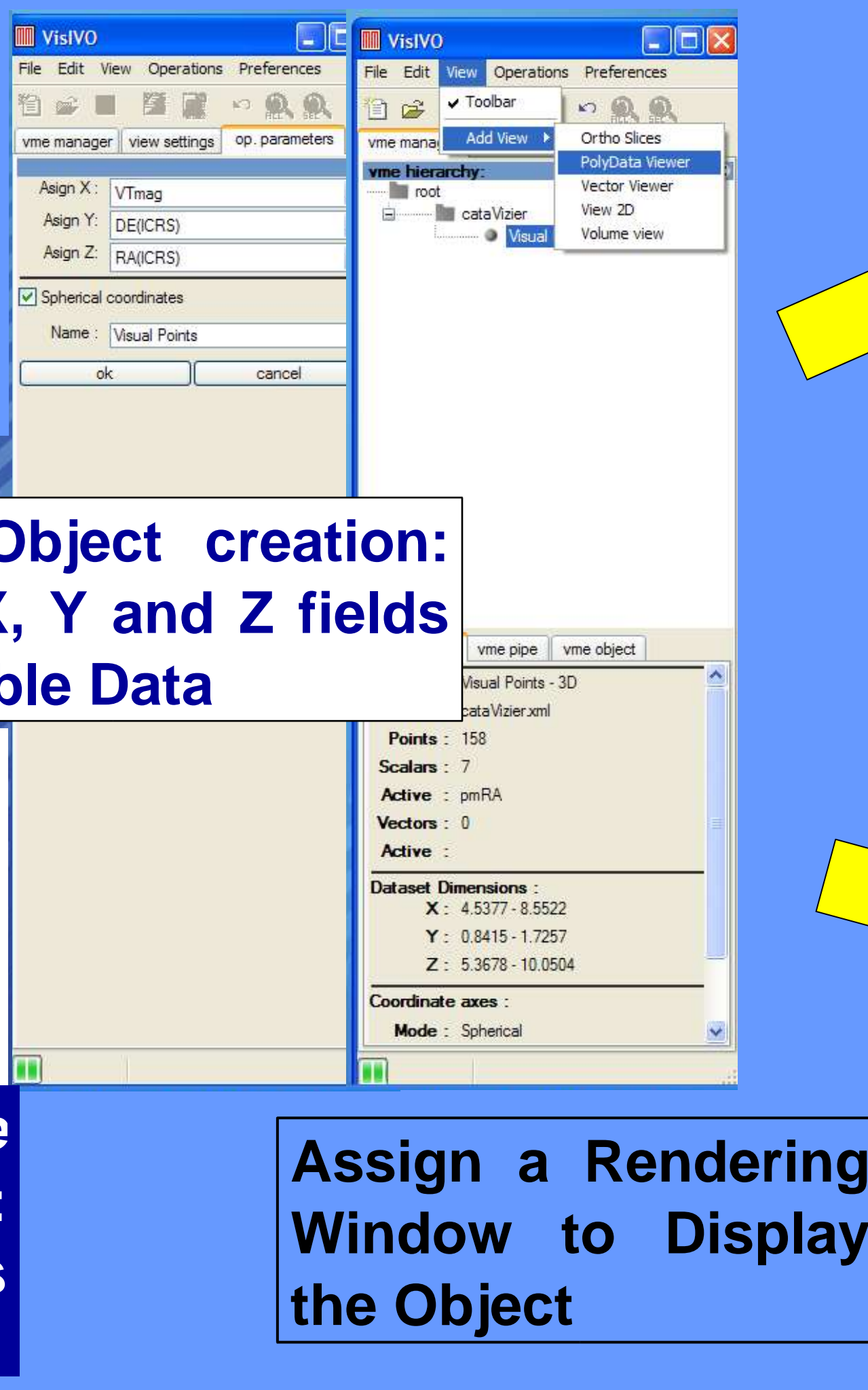
It is also able to interoperate with the other astronomical VO compliant tools through PLASTIC (PLatform for AStronomical Tool InterConnection). This feature allows VisIVO to share data with many other astronomical softwares in order to obtain further information on the data loaded. VisIVO is included in the PRIN INAF program “Determinazione delle proprietà della materia oscura con il weak lensing nelle surveys a largo campo”

## VizieR WS Cone Search Data Downloading



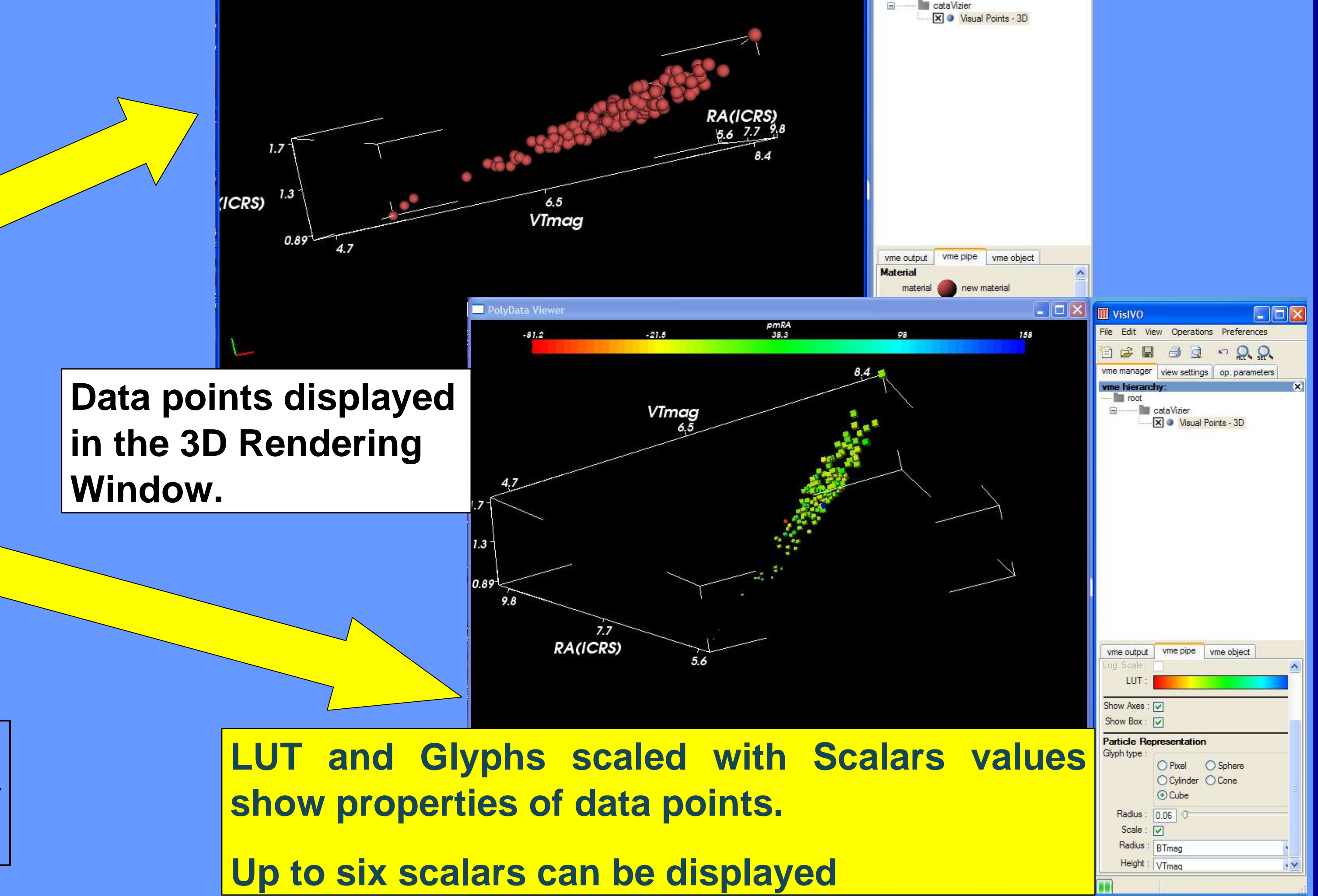
**Import a VoTable from VizieR Catalogue**

**VizieR answers VoT data from the Cone Search are Downloaded: a temporary Table Data is created**



**2D/3D Object creation: Select X, Y and Z fields from Table Data**

**Assign a Rendering Window to Display the Object**

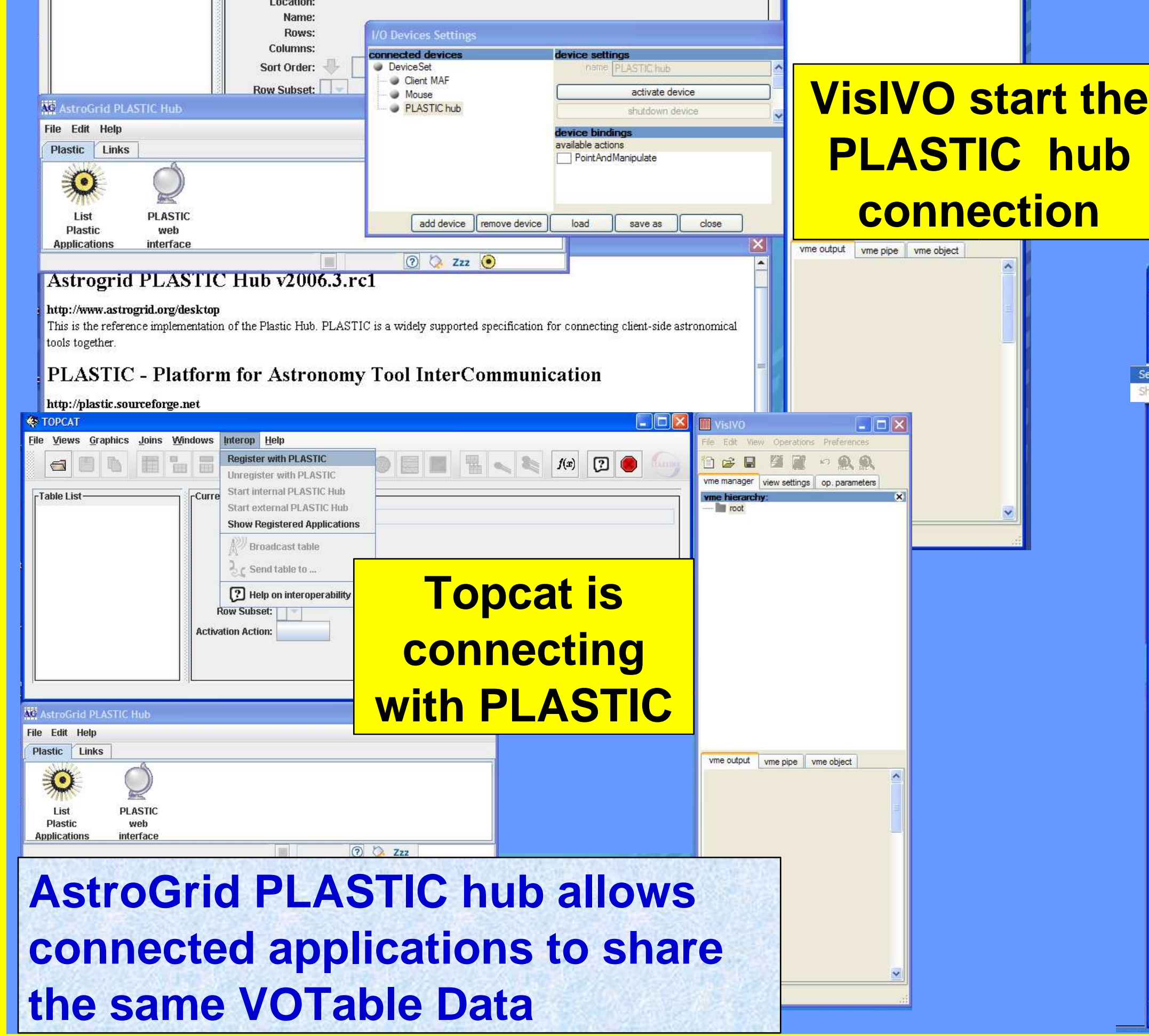


**Data points displayed in the 3D Rendering Window.**

**LUT and Glyphs scaled with Scalars values show properties of data points.**

**Up to six scalars can be displayed**

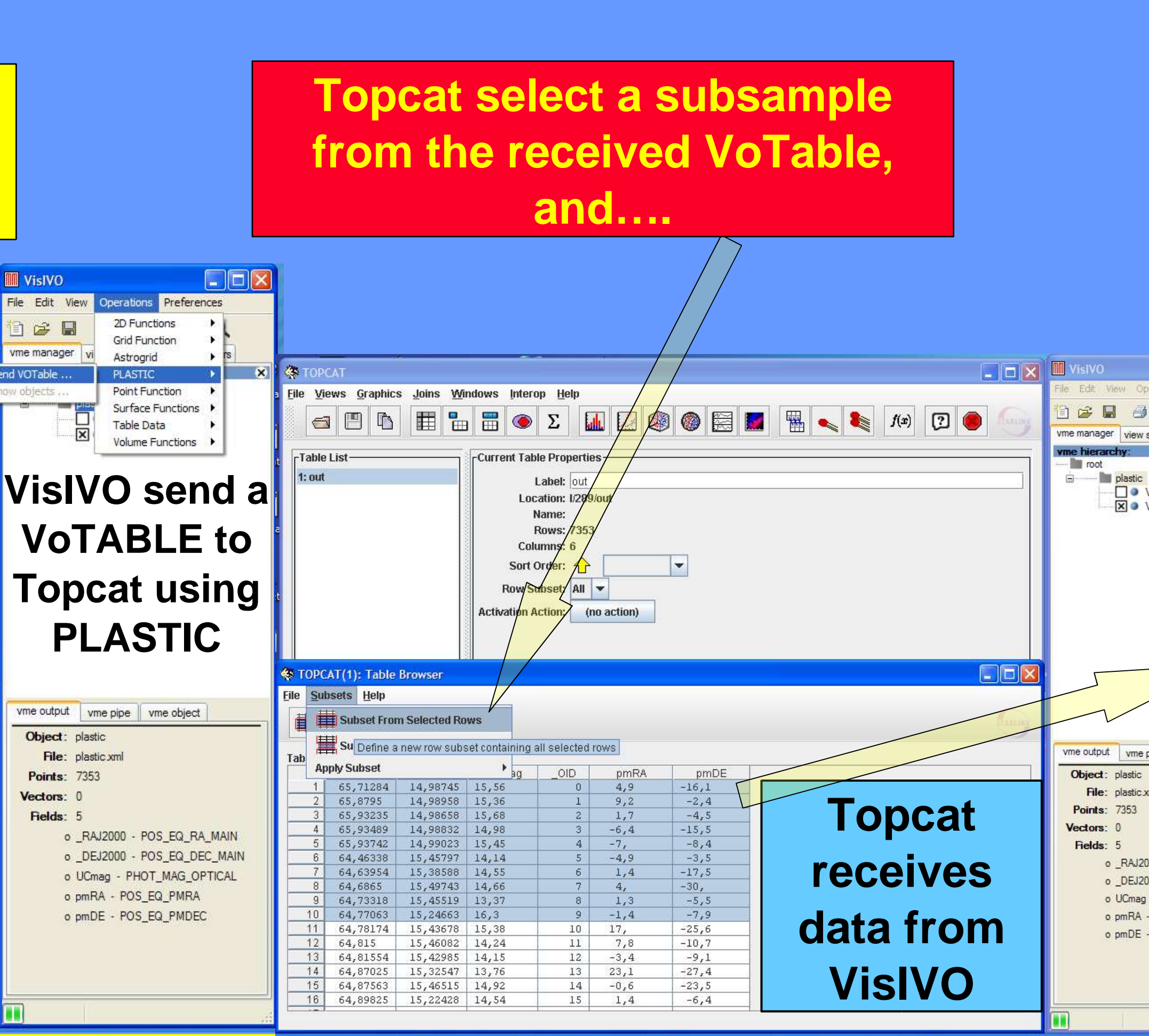
## VisIVO Data Sharing and Interoperability



**VisIVO start the PLASTIC hub connection**

**Topcat is connecting with PLASTIC**

**AstroGrid PLASTIC hub allows connected applications to share the same VOTable Data**

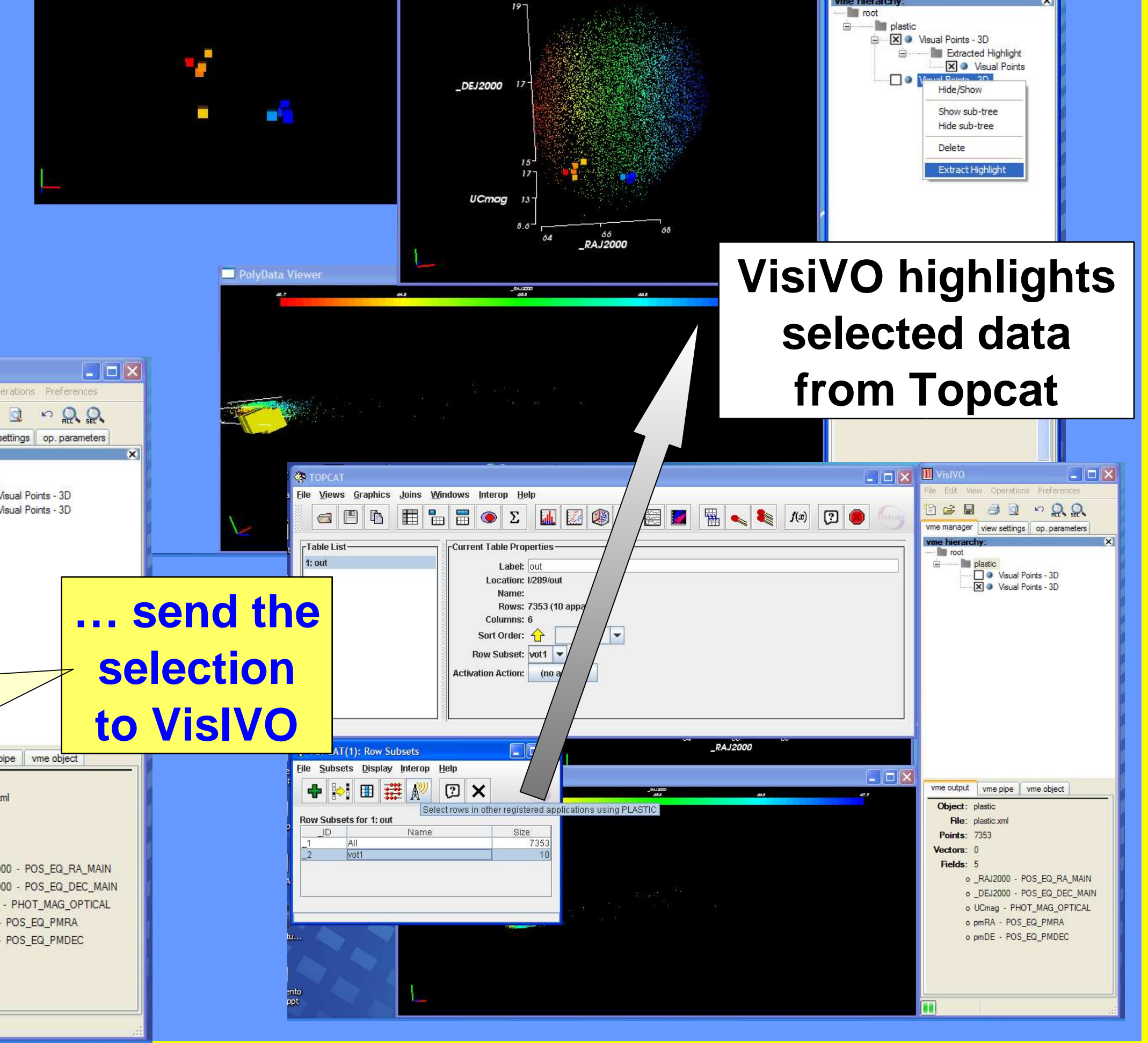


**Topcat select a subsample from the received VoTable, and....**

**VisIVO send a VoTABLE to Topcat using PLASTIC**

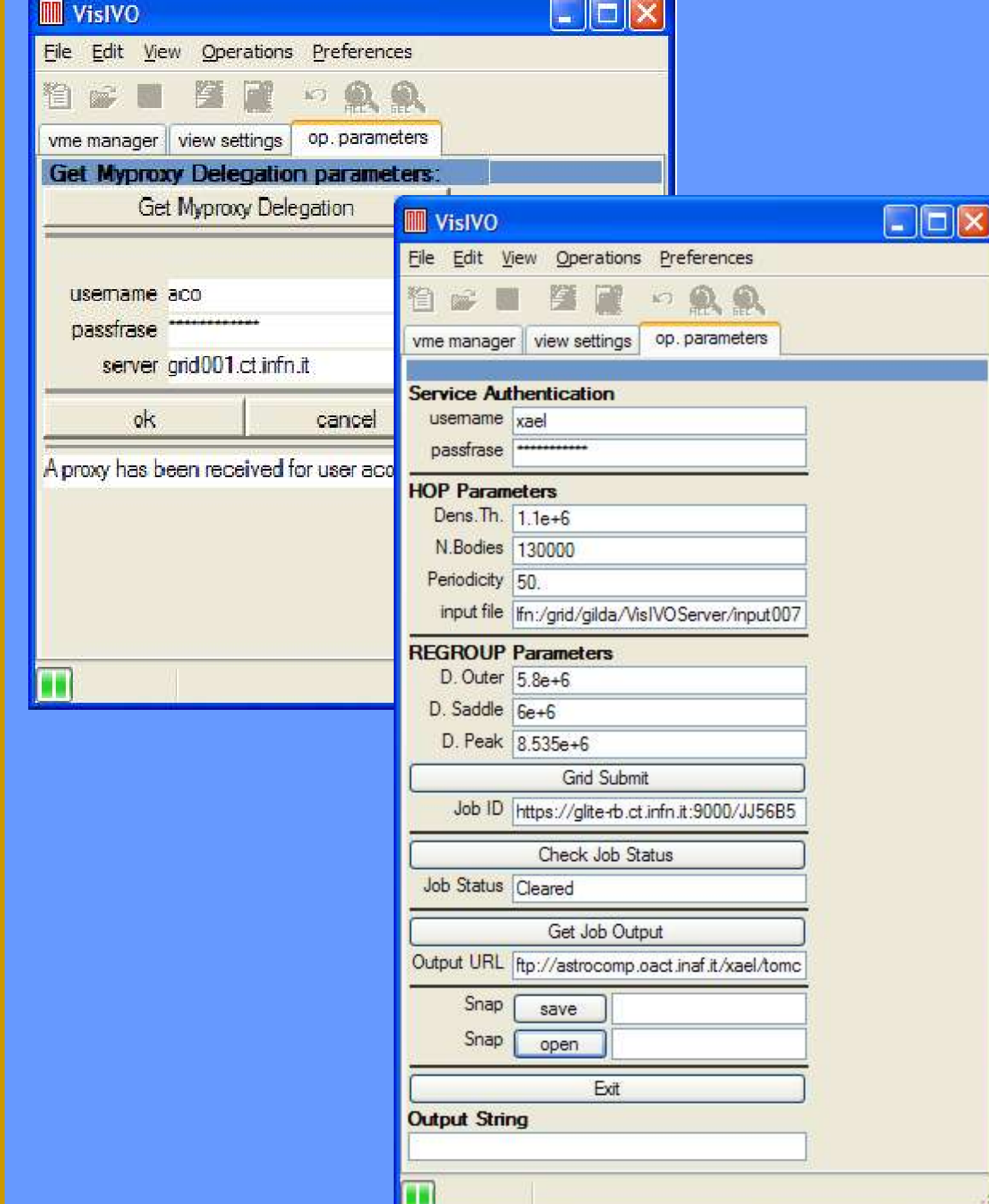
**Topcat receives data from VisIVO**

**... send the selection to VisIVO**



**VisIVO highlights selected data from Topcat**

## VisIVO and submitted jobs in the INFN Grid (EGEE compliant)



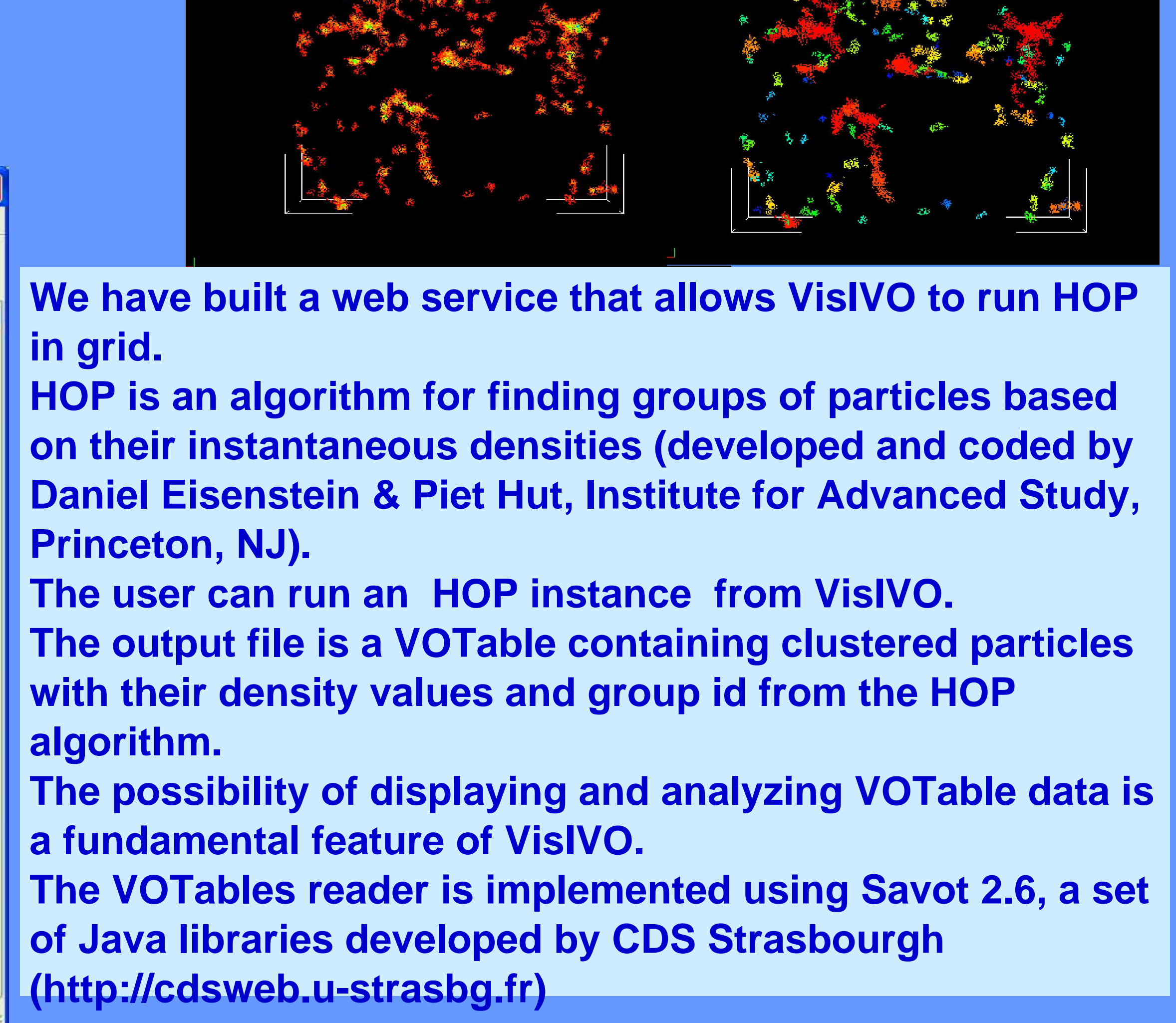
**Get Myproxy Delegation parameters**

**Service Authentication**

**HOP Parameters**

**REGROUP Parameters**

**Grid Submit**



**We have built a web service that allows VisIVO to run HOP in grid.**

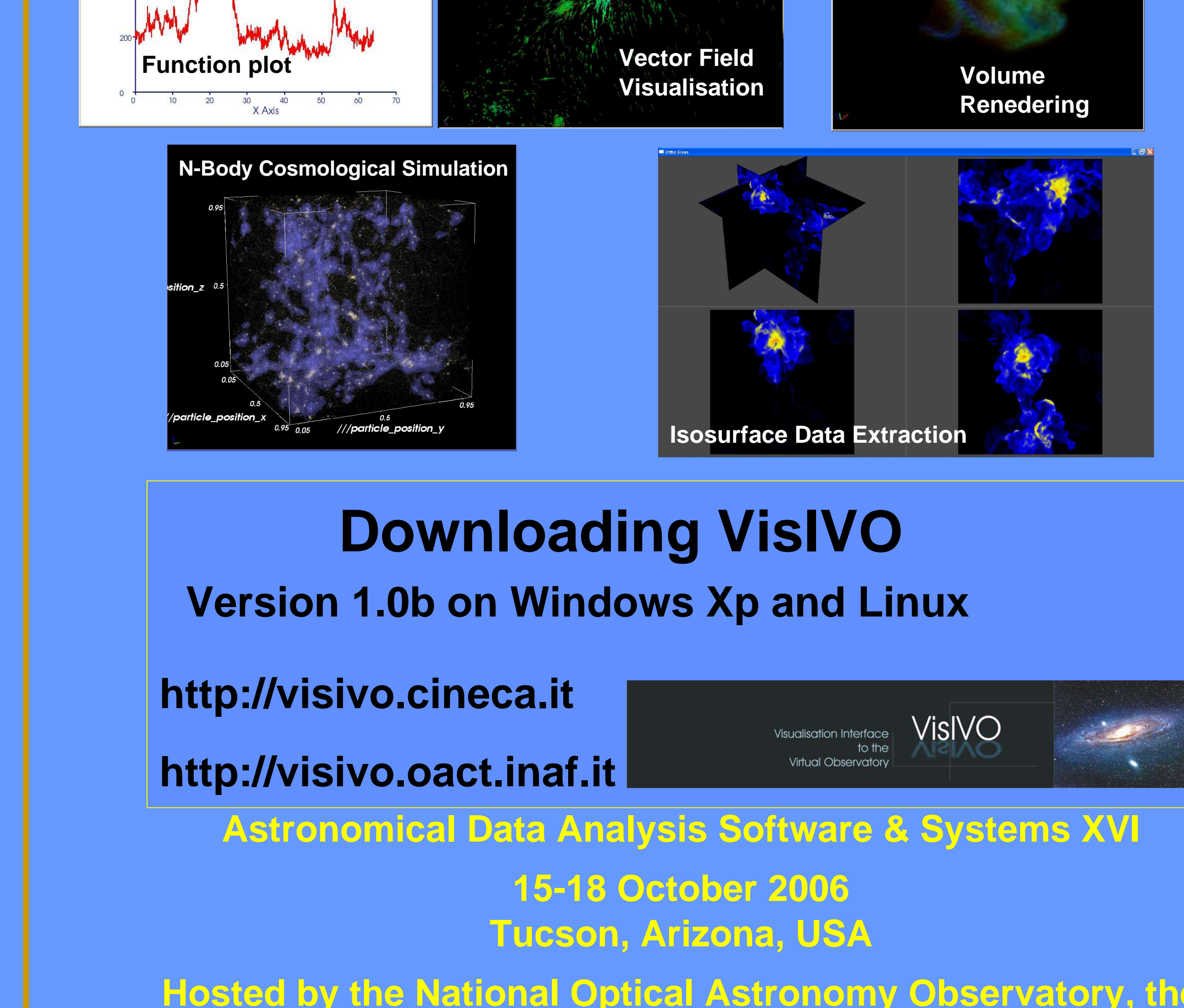
**HOP is an algorithm for finding groups of particles based on their instantaneous densities (developed and coded by Daniel Eisenstein & Piet Hut, Institute for Advanced Study, Princeton, NJ).**

**The user can run an HOP instance from VisIVO.**

**The output file is a VOTable containing clustered particles with their density values and group id from the HOP algorithm.**

**The possibility of displaying and analyzing VOTable data is a fundamental feature of VisIVO.**

**The VOTables reader is implemented using Savot 2.6, a set of Java libraries developed by CDS Strasbourg (http://cdsweb.u-strasbg.fr)**



**Function plot**

**Vector Field Visualisation**

**Volume Rendering**

**N-Body Cosmological Simulation**

**Isosurface Data Extraction**

## Downloading VisIVO

Version 1.0b on Windows Xp and Linux

<http://visivo.cineca.it>

<http://visivo.oact.inaf.it>

**Astronomical Data Analysis Software & Systems XVI**

**15-18 October 2006  
Tucson, Arizona, USA**

**Hosted by the National Optical Astronomy Observatory, the University of Arizona, the Large Binocular Telescope Observatory, and LSST Corporation**