



IVOA Interoperability Meeting



**VObs.it : new developments for
ITVO**

(Italian Theoretical Virtual Observatory)





Summary



ITVO developments:

- Four sites and archive of simulated data are linked under the VObs.it Web site (Trieste, Bologna, Catania, Teramo);
- All tools and services will be available in every sites, to work where the data are;
- The tools like VisIVO Server, STILTS, Aladin will operate using the standard protocols and sending XML table;
- An XML / VOTable will describe in a standard way the data to exchange information with the tools and for comparison of different kind of simulation ;
- According to us also the microsimulation of BaSTI (A Bag of Stellar Track and Isochrones) could be accessed in two way via S3P or via SimDAP to search, preview, cutout and custom (see BaSTI Web tools);
- Also for stellar model could be define a Standard VOTable format with four mandatory quantities: M , $\log(L)$, $\log(T_e)$, $\log(t)$;
- VisIVO Server and VisIVO Web implemented using distant databases for visualization, download or/and cutout of theoretical data;
- STILTS for analyzing and overlapping theoretical and observational data.



ITVO Web portal



ITVO Web site:

- data servers:
 - [ITVO@Trieste](#)
 - [ITVO@Catania](#)
 - [ITVO@CINECA](#)
 - [BaSTI@Teramo](#)
- Services:
 - **Download**,
 - **Preview**, perform using VisIVO and Aladin that are VO tools;
 - **Cutout**, select and perform by VisIVO tool;
 - **Graphics**, produced using STILTS a VO tool;
 - **VOtable**, creation of this VO standard data format.
 - **VisIVOWeb** ;



Windows Explorer - Windows Explorer
https://voobs.astro.it/index.php?option=com_content&view=full&Itemid=205&layout=edit

VObs.it Official Website - Theory in the VO

Search
GO

INAF

VObs.it

Monday, 18 May 2009

MAIN MENU

- Home
- Workshop Rome 11/06
- Archives
- Standards
- VObs.it Services
- Theory in the VO
- Education
- International Projects
- Administrator

THEORY IN THE VO

Italian Theoretical Virtual Observatory - ITVO

The aim of the Virtual Observatory has expanded from seeking interoperability among astronomical catalogues and archive systems to including also access to analysis tools, computational services and numerical simulations. As a matter of fact, beside the observational data, there is also a huge amount of theoretical data generated by computer simulations that can be useful if published in Virtual Observatory compatible form.

Therefore, considerable interest has been shown in including products of theoretical research. A data model (SimDB) for theoretical data is being designed. At the same time, an interim Simulation Data Access Protocol (SimDAP) as part of the Data Access Layer provides, through negotiation between the client and the theoretical dataset service, a standardized access mechanism to distributed theoretical data objects.

In this Web site there is the first integration within the Virtual Observatory of a set of theoretical data structured with a prototype of the SimDAP data access protocol. Our resource provides not only access to simulation data stored in a dedicated archive but also, interfacing web services, a visualization service and the possibility to extract a number of astronomical observations. We focused our work on a set of numerical simulations of galaxy clusters produced with the GADGET2 code, Enzo and FLY and also of a set of evolutionary model data obtained running the FRANEC code. We show the possibility of visualizing theoretical results with VO-enabled astronomical tools, of comparing the results with astronomical observations.

The ITVO spread archive is part of a joint collaboration between Italian Institute for Astrophysics (INAF) and CINECA supercomputing center, developed inside the EURO-VO project as VO-TECH, VO-DCA and VO-MOA.

ITVO theoretical data server

At the moment, there are four servers available for request of data and services on that, they are:

- ▶ [ITVO@Trieste](#) (Trieste Astronomical Observatory);
- ▶ [ITVO@Catania](#) (Catania Astronomical Observatory);
- ▶ [ITVO@CINECA](#) (Bologna);
- ▶ [BaSTI](#) (Teramo Astronomical Observatory).

The data archive presently in the first three consists of the outcome of a set of high and cosmological simulations run with the three popular codes:

- ▶ [Gadget 2](#),
- ▶ [Enzo](#),
- ▶ [FLY](#).

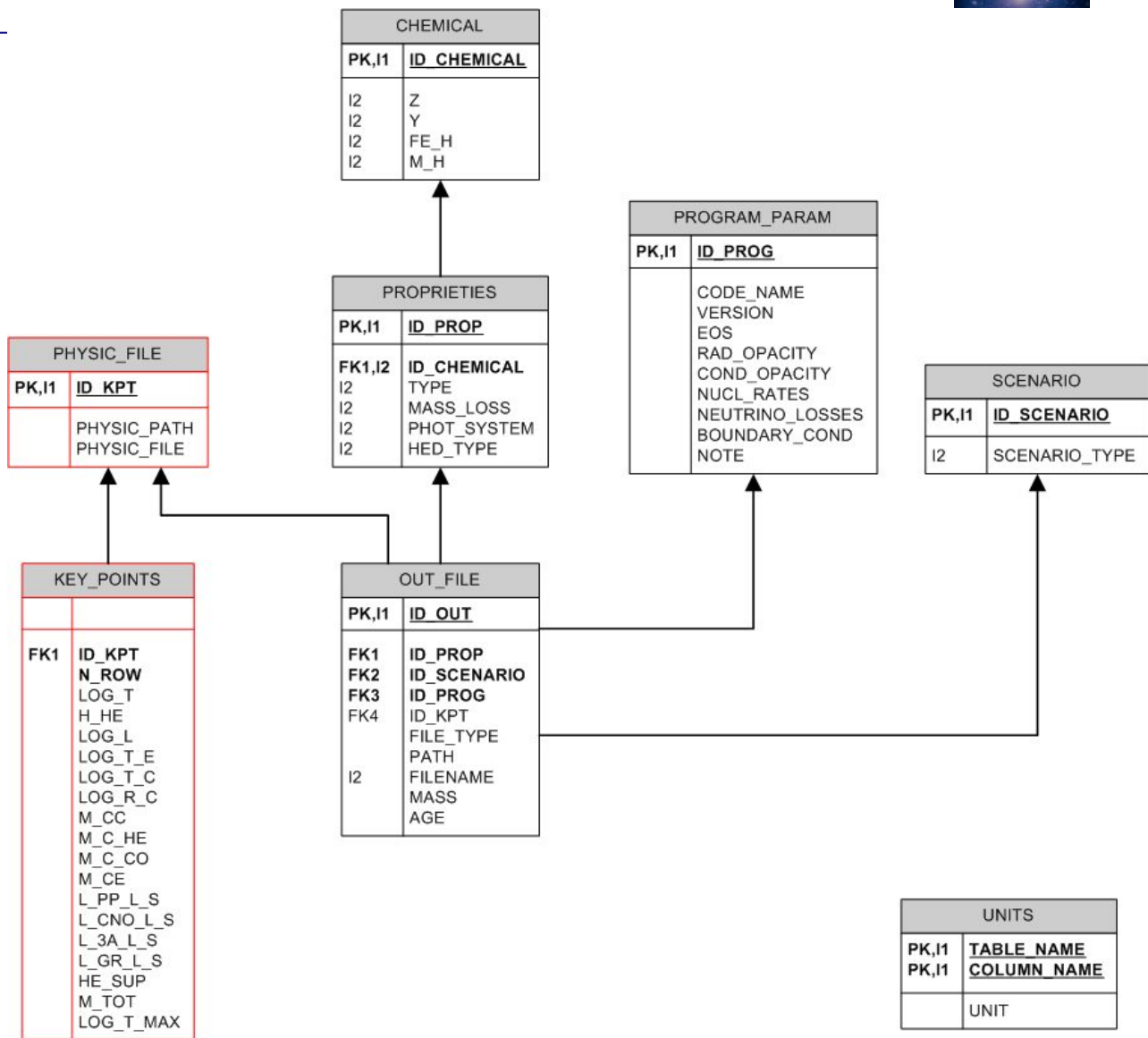


Data Servers



News:

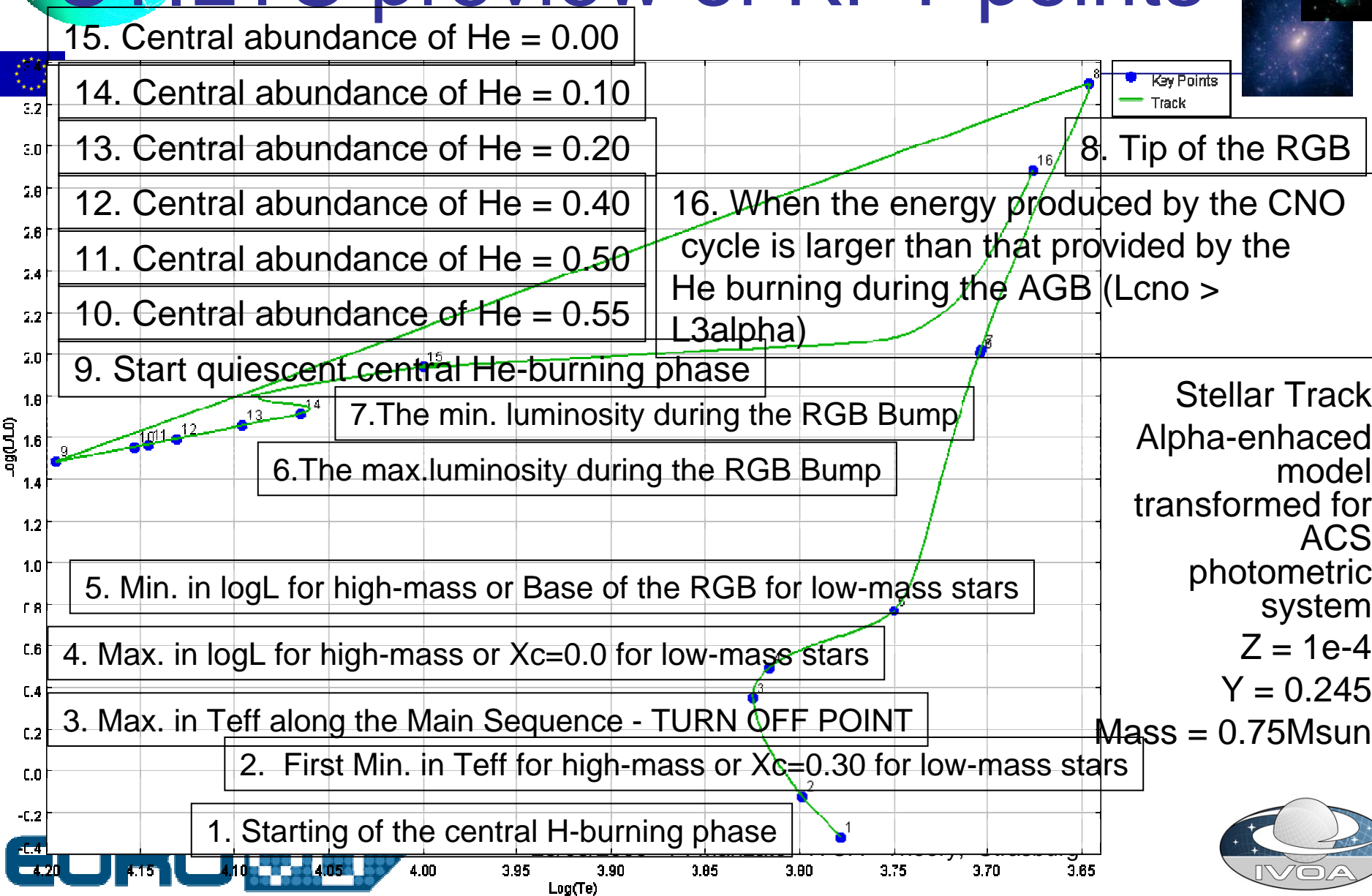
- New tables for BaSTI DB, summarize the key points in the star evolution;
- Will be plotted key points on STILTS;



UNITS	
PK,1	TABLE_NAME
PK,1	COLUMN_NAME
	UNIT

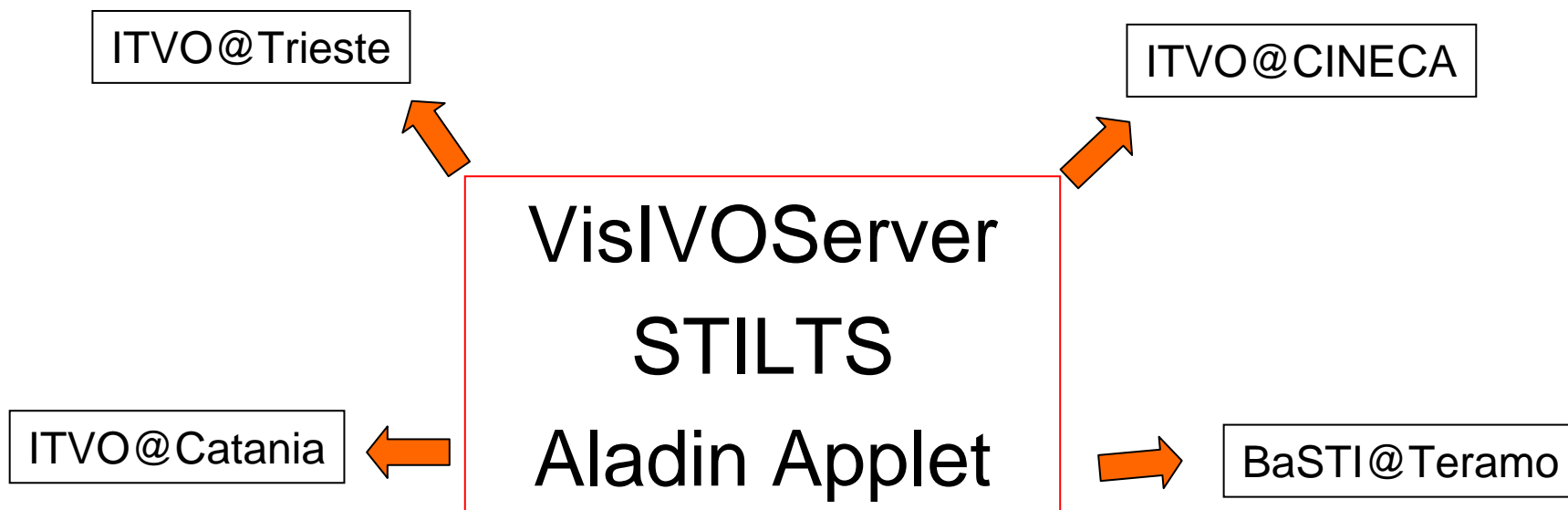


STILTS preview of KPT points





Tools installed where data are





XML format

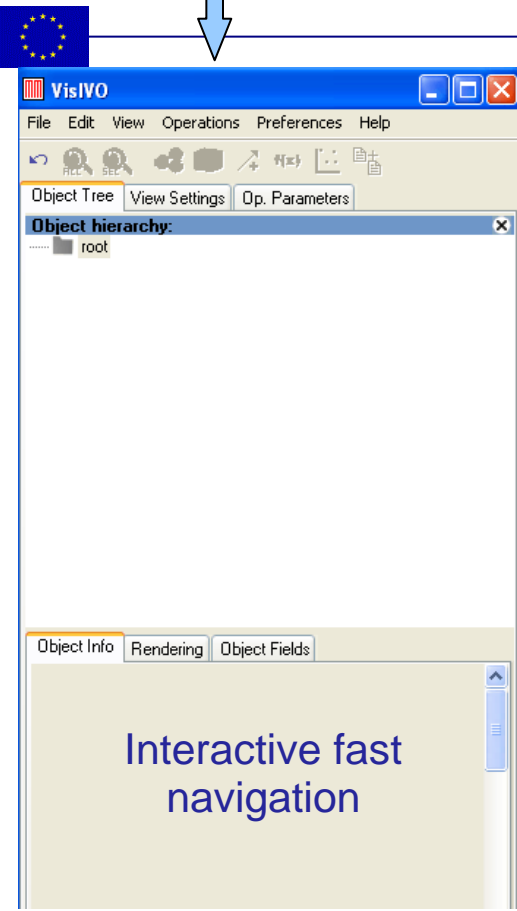


XML header to exchange data information,
(see R. Wagner presentation);
Also XML standard format for evolutionary
mode with four quantities mandatory:
M, $\log(L)$, $\log(T_e)$, $\log(t)$
after will be “colour” with different models.



VisIVO Server

VisIVOWeb



**--format votable
/home/user/demo/vizier.xml
.....
--x x --y y --z z --color --
colortable --colorscalar scalar0 --
glyphs sphere**

environment

Pc GNU/Linux



Closely integrated, complementary and independent !

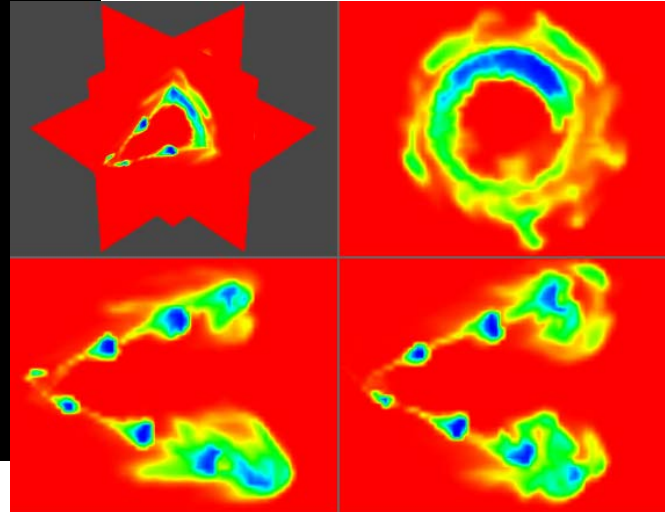
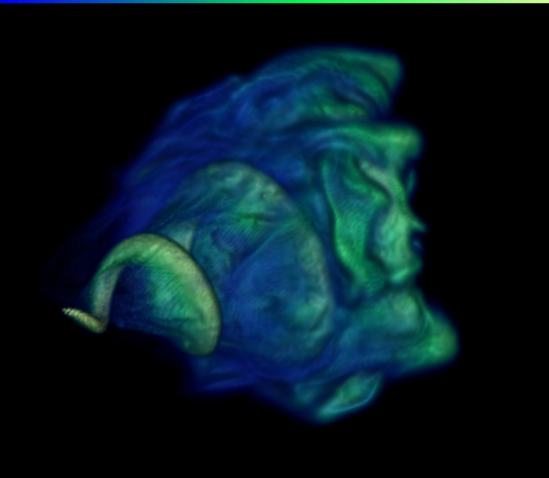
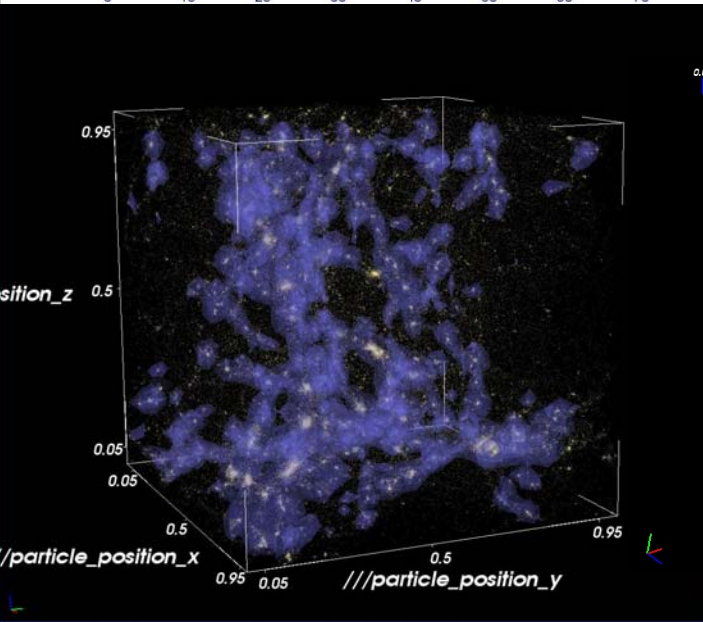
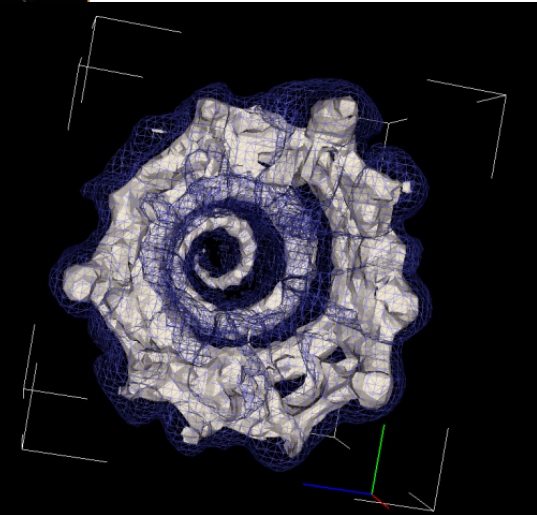
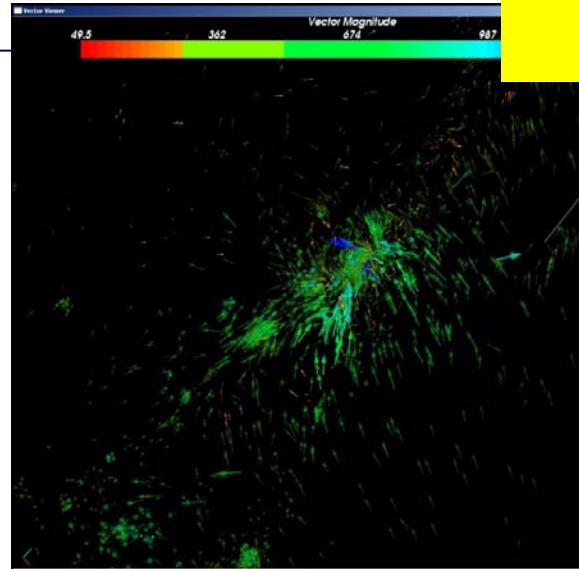
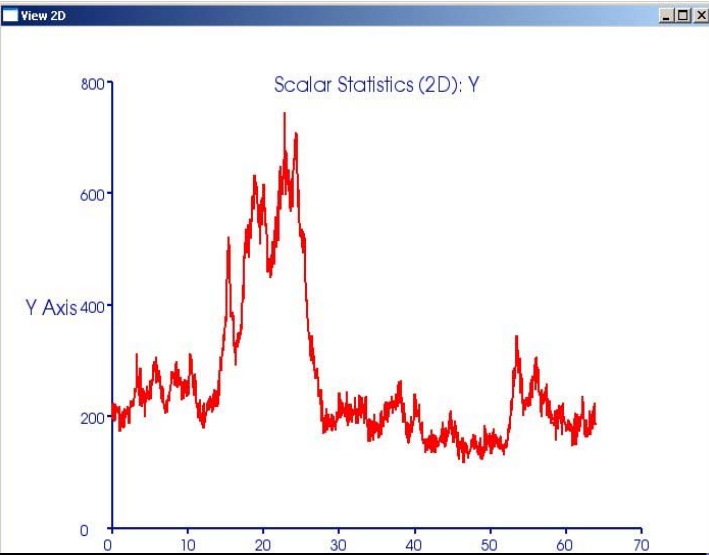
25/05/2009 - P. Manzato - IVOA - Theory, Strasbourg





Visualisations

Navigation -- Zoom -- Lookup
table -- Algorithms -- Data
selection -- Picker op. --
Interoperability



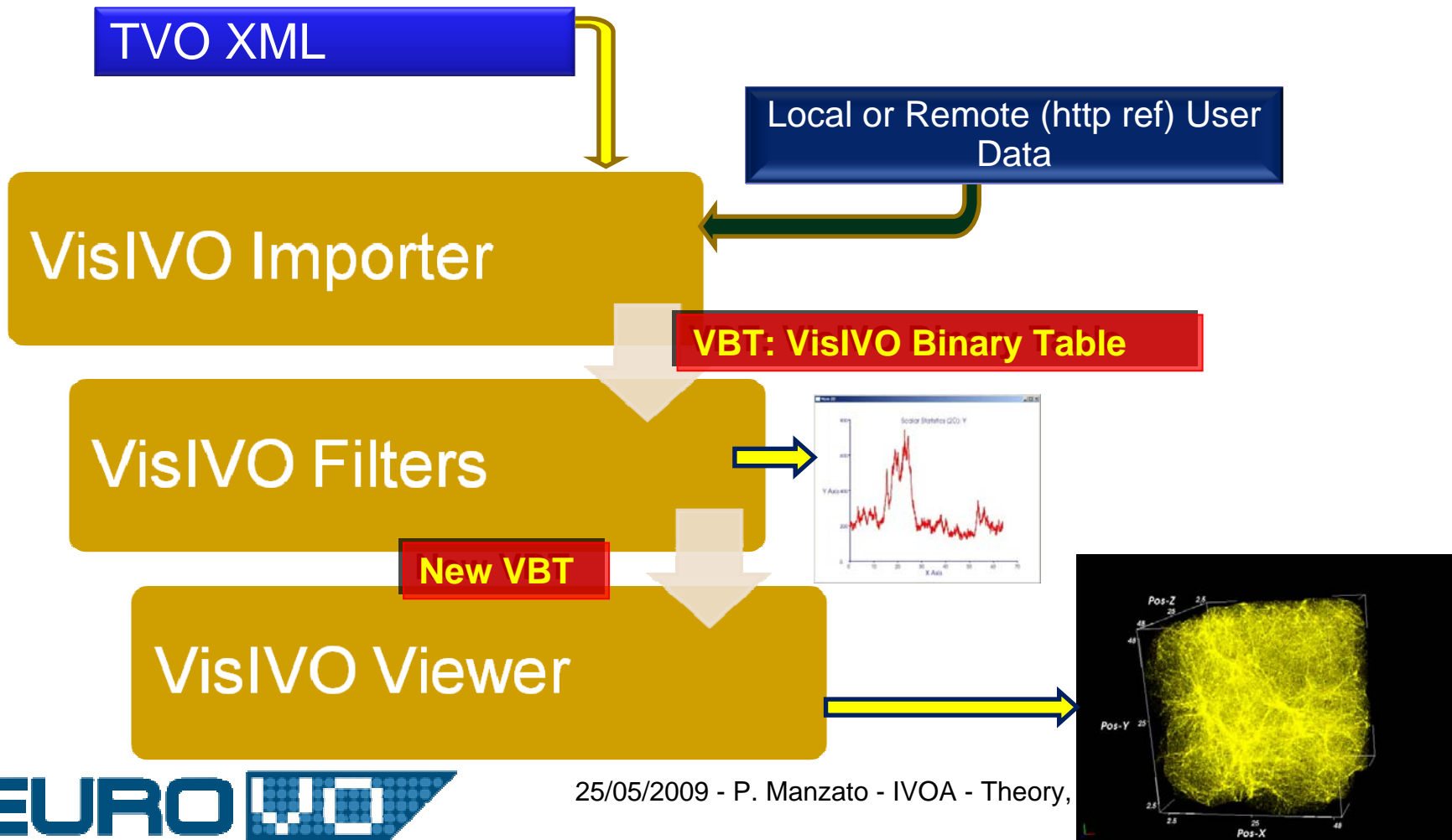


VisIVO Server

Basic Architecture

Visualisation Interface
to the
Virtual Observatory

VisIVO Server





VisIVO Server on the Grid



Non-interactive command line application that implements visualisation functionalities; its output is a static 2D image of a 3D object

Easy integration in Virtual Observatory compliant Web Services and in the Grid environment

It will provide the user with a 3D preview of huge data exploiting the powerful facilities of the Grid environment

Easy to use

Open Source code: project maintained on sourceforge.
NO LIMIT on data size !



VisIVOWeb

Visualisation Interface
to the
Virtual Observatory

VisIVO Server



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



Home

Main Menu

Home
Return to Application

Documentation

VisIVO Importer
VisIVO Filters
VisIVO Viewer

Useful Link

- VisIVO

Login

Username

Password

Remember Me

Lost Password?
No Account Yet? Create an account

Anonymous Nick.

Visivo server

Upload your data View your images Home About Us

Home >> Return to Application

Navigation Tree

View

open all | close all

- AnonymousEpa
- Demo Data
- User Data

ASCII CSV VOTABLE BINARY

FLY FITS GADGET HDF5

RAW GRID RAW BINARY TVO XML CHECK JOBS

ASCII files are expected to be in tabular format. The file can contain N variables organised in columns. Each column represent a different array. Columns are separated by blank characters (space, tab, etc.). In the first row the names of the variables are stored.

ASCII

Table Volume

Description:

Local File

or Remote File

URL:

If URL requests authentication insert username and password of remote server

Username: Password:

La pagina sul server <http://itvo.oact.inaf.it> ...

This account has 4 days validity since last access. At the end of period all data will be lost



Vis/VOWeb

Image list in reverse chronological order

Download selected images Delete selected images Select all images Un

NEWS:
Movies can
be created





VisIVO Server *On the World*



- Install version 1.0: 15 April at Portsmouth and INAF-OACT
- Install 29 Aprile at INAF-OATrieste for ITVO (Italian Theoretical Virtual Observatory)
- July will be install at CINECA for ITVO (Italian Theoretical Virtual Observatory)
- request of installation in September on “GRID of South Africa” (Prof. G. Ellis)
- could be installed at TVO Paris Observatory



Remainder

VisIVOWeb on-line tutorial 25/06/2009



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