
Datalink

XMM-Newton Spectra

TapHandle

<http://www.ivoa.net/documents/Notes/DataLink/index.html>

<http://saada.u-strasbg.fr/taphandle>

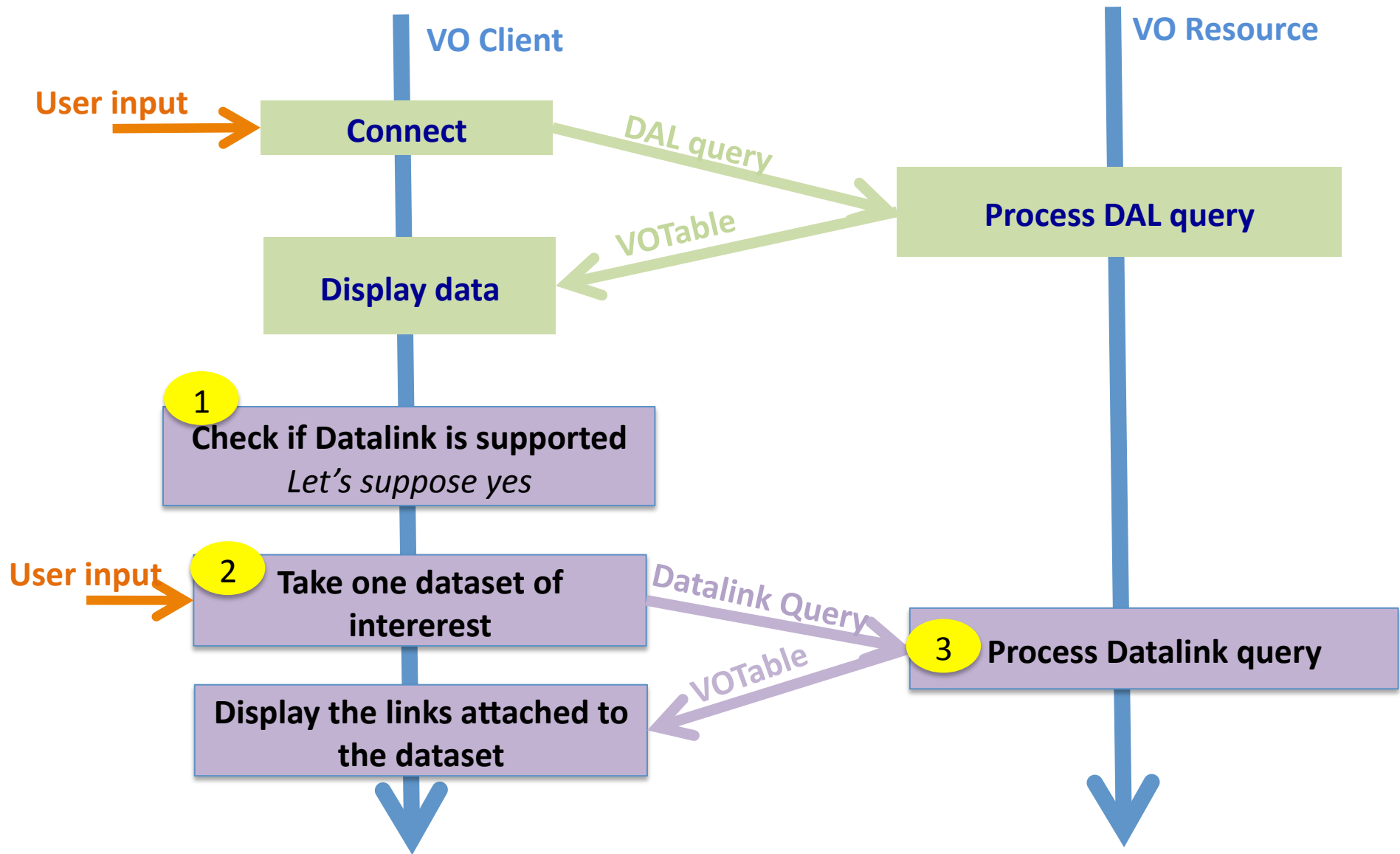
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DataLink

- **A new type of protocol**
 - Not designed to explore data collections
 - Designed to explore data or services attached to one observation/dataset/data file
- **At the edge of the VO**
 - It can access data either into the VO or out of the VO
 - It can either refer to standardized VO protocols or it can access any legacy service or archive.
- **IVOA note published in May 2013**
(L Michel, F. Bonnarel and M. Louys)

Diagram of Datalink Access Sequence



1

Registering Datalink

- **Datalink as a registered service**
 - The service takes any universal observation identifier to return pointers to linked data.
 - ? How to locate an dataset from its DID?
 - ? Is the server supposed to be able to forward requests to the server which actually hosts the observations ?
- **Datalink as a service capability**
 - Capability attached to one DAL service
 - The client connecting this DAL service can get any information he needs to provide users with linked data
- **Same access method in both cases (http get/post)**

`http://my.server.net/datalink?uri=caom:CFHT/1247354/1247354og`

Service URL

parameter

Protocol

Observation DID

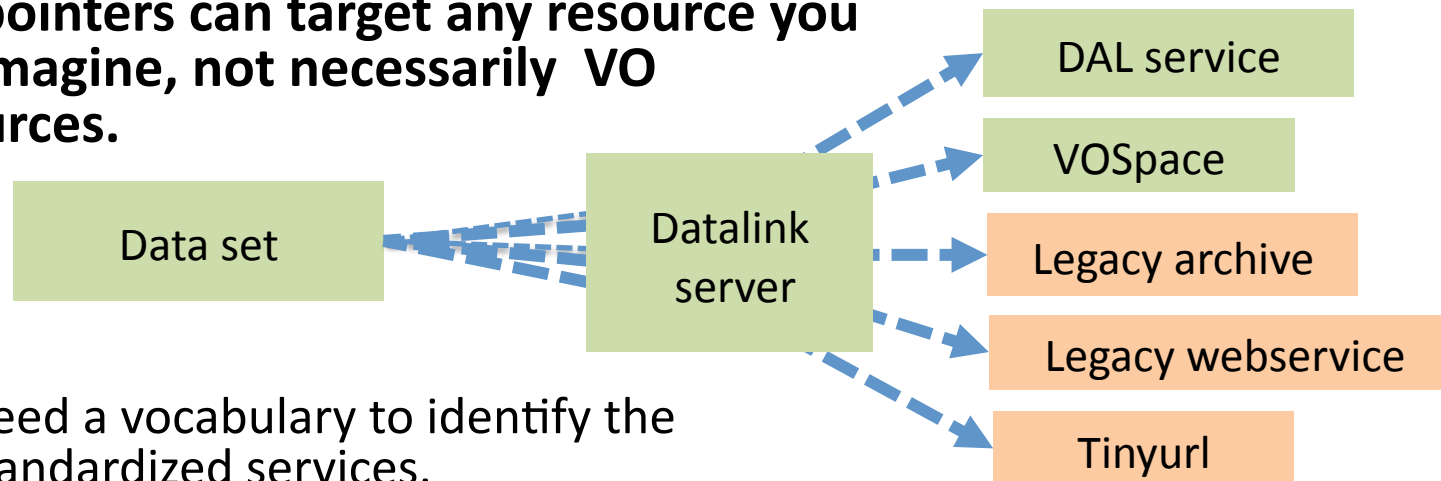
Observation Identifier

- **The Datalink server needs a unique identifier to retrieve the starting point dataset.**
 - The Obs IDs must be identifiable by the client in both query result matching or not a DM..
 - Must be automatically retrieved by the client.
 1. By **Utype** e.g. *Curation.PublisherDiD...*
 2. By **UCD** e.g. *meta.ref.url;meta.curation*
 3. By **Column name** for data table matching a data model e.g. *Obs_publisher_DiD* for *ObsCore*

Data returned by the server

- **The Datalink server does not return data but a list of pointers.**
 - Each pointer is a URI of the link target
 - Data
 - Online processing result
 - Need a vocabulary to identify the standardized services.
 - Preview, DAL queries, Cutout....

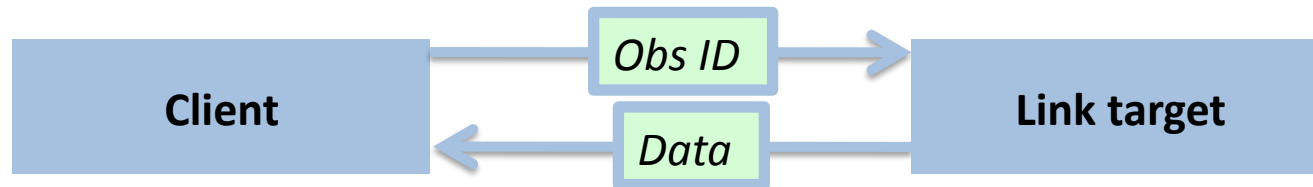
- **The pointers can target any resource you can imagine, not necessarily VO resources.**



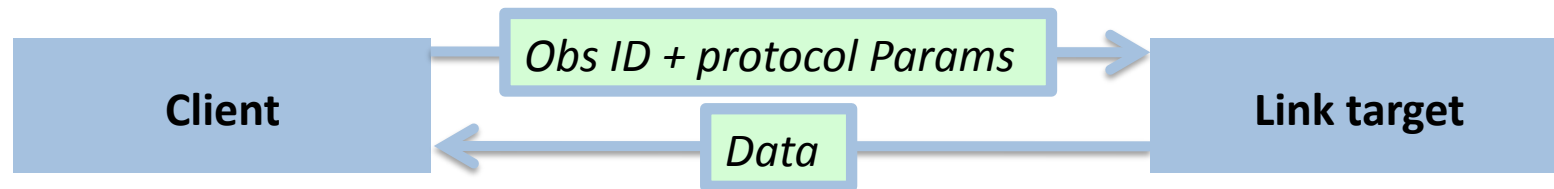
- Need a vocabulary to identify the standardized services.
 - Preview, DAL queries, Cutout....

3 Datalink Access Modes

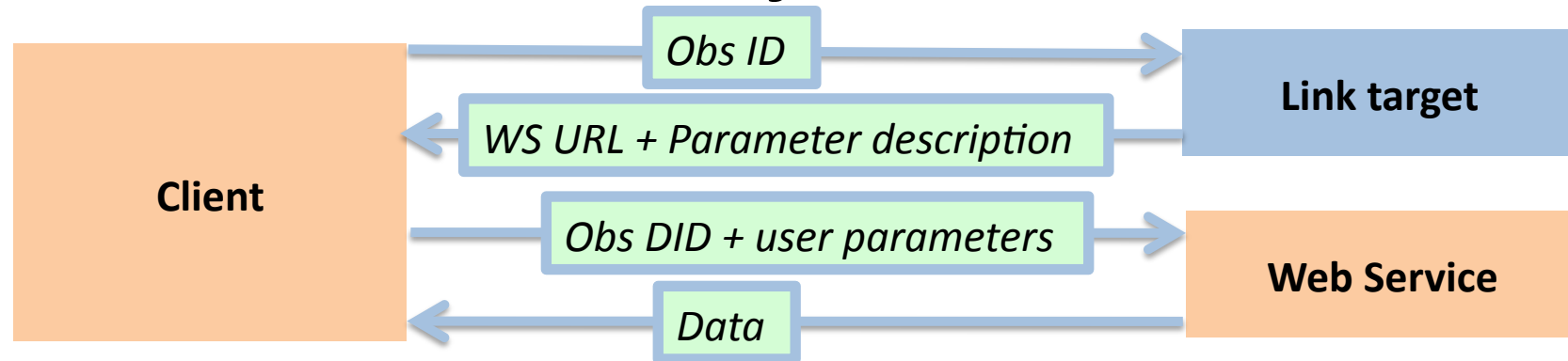
- **Direct data access**



- **Web service with a standard protocol**



- **Free Web service or *Self Described Services***



Self Described Services Parameters


- **The parameter definition remains simple and flexible**
 - Name
 - Free text description
 - Simple data type (String, integer, float, STC?)
 - Unit
 - UCD
 - Range of values ([min, max] or enumeration)
 - Include one default value to allow queries without user setup
- **The way to use this parameter description to get user inputs is in charge of the client.**

XMM-Newton Use Case

- HE astronomers are often interested in using VO resource to find out outlayers or objects matching a specific class (no POO here)
- The *naked eye* selection of object is a frequent usage of the XCatDB (XMM-Newton)
 1. Selection by KW
 2. Download spectrum with calibration data
 3. Process it
 4. Evaluate the result
 5. Select or reject the object
 6. Back to the DB

Datalink shortcut

Demo Sequence



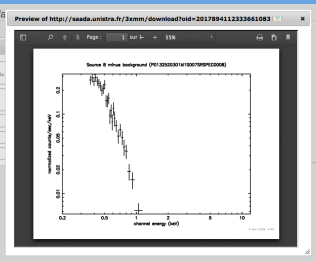
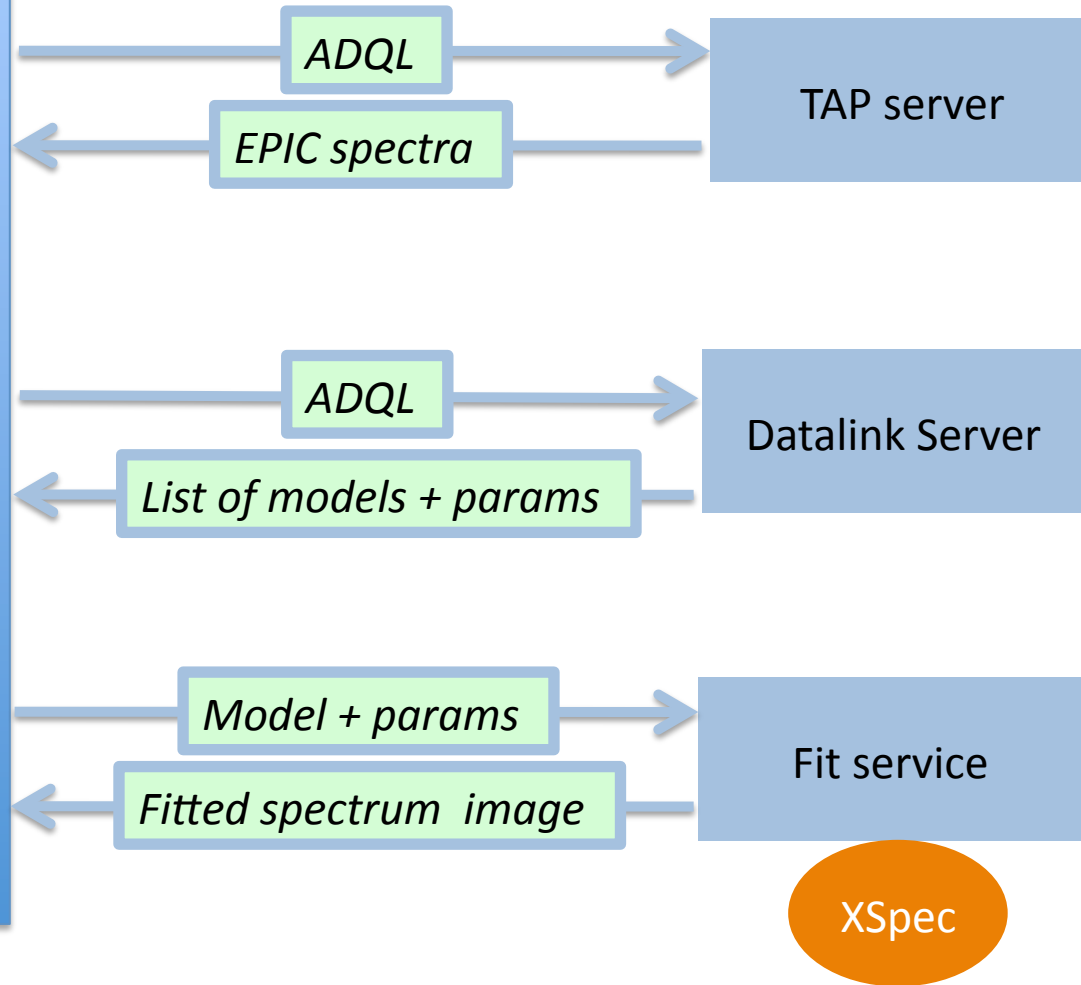
Taphandle

Display result

oidsaada	datalink	pos_ra_csa	pos_dec_csa	x_min_org_csa	x_max_org_csa
1.1715555		0.11994801	0.0000000	799.00000	
110.11021		-31.421471	0.0000000	799.00000	
109.84746		-31.434205	0.0000000	4095.00000	
110.11142		-31.421386	0.0000000	4095.00000	
110.04561		-31.387169	0.0000000	4095.00000	
109.97724		-31.438331	0.0000000	4095.00000	
109.91557		-31.474367	0.0000000	799.00000	
1.3019998		-0.035046078	0.0000000	4095.00000	
110.31878		-31.522508	0.0000000	799.00000	
110.10406		-31.430465	0.0000000	4095.00000	

Dynamic HTML form

Fit result display

Demo Screenshot: EPIC spectra table

Show 10 entries

oidsaada	pos_ra_csa	pos_dec_csa
Name: oidsaada	1.1715555	0.11994801
Unit:	110.11021	-31.421471
UCD: meta.id;meta.main	109.84746	-31.434205
UType: null	110.11142	-31.421386
Data Type: int8	110.04561	-31.387189
	109.97724	-31.436331



Show 10 entries

span#titlepath.pagetitlepath



















































Showing 1 to 10 of 60 entries

oidsaada	datalink	pos_ra_csa	pos_dec_csa	x_min_org_csa	x_max_org_csa
		1.1715555	0.11994801	0.0000000	799.00000
		110.11021	-31.421471	0.0000000	799.00000
		109.84746	-31.434205	0.0000000	4095.0000
		110.11142	-31.421386	0.0000000	4095.0000
		110.04561	-31.387189	0.0000000	4095.0000
		109.97724	-31.436331	0.0000000	4095.0000
		109.91557	-31.474367	0.0000000	799.00000
		1.3019998	-0.035046078	0.0000000	4095.0000
		110.31878	-31.522508	0.0000000	799.00000
		110.10406	-31.430465	0.0000000	4095.0000



Show 10 entries

Demo Screenshot: Datalink popup

Show 10 entries

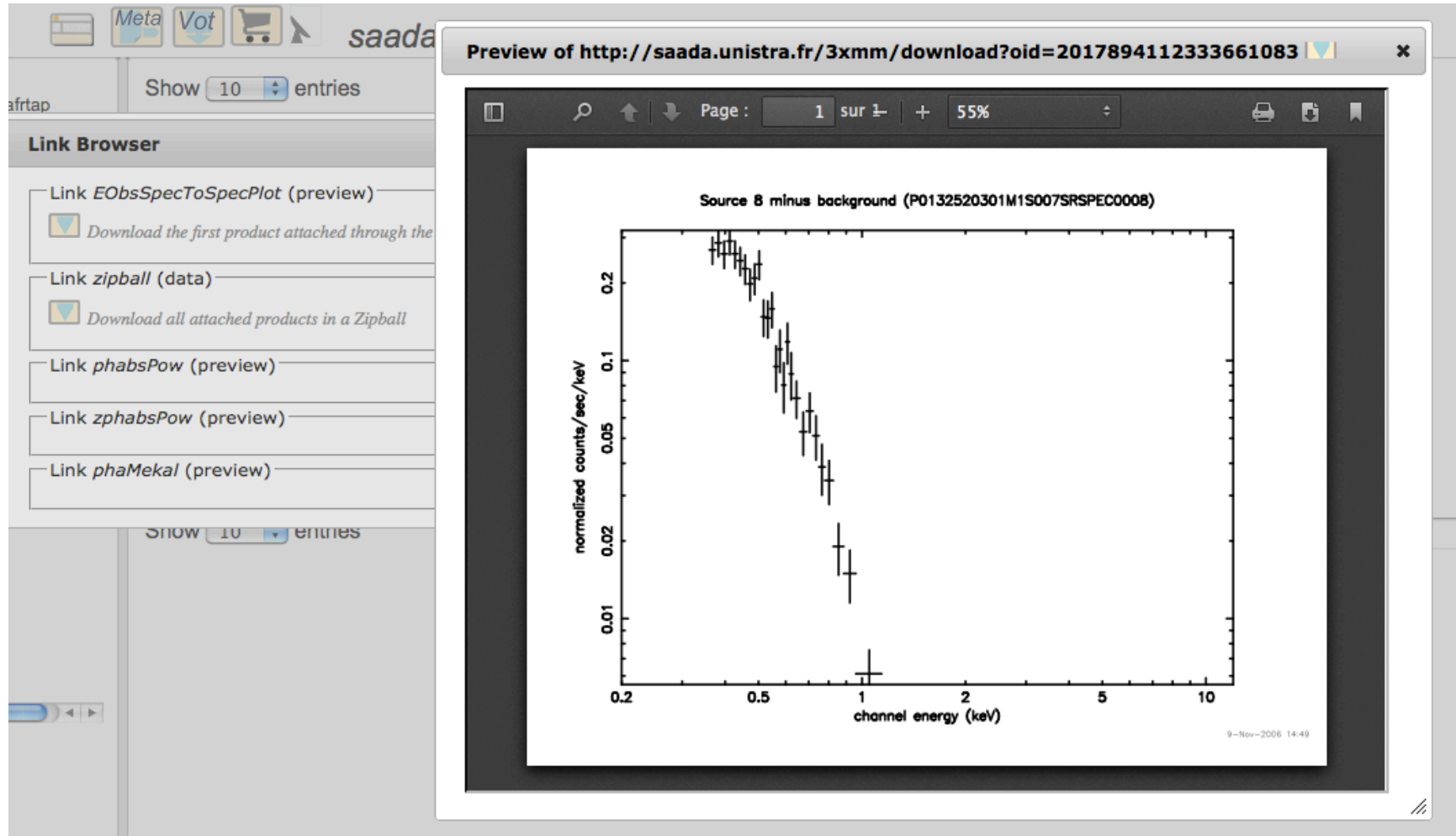
oidsaada	datalink
   	
   	
   	
   	
   	
   	
   	
   	
   	
   	

Link Browser

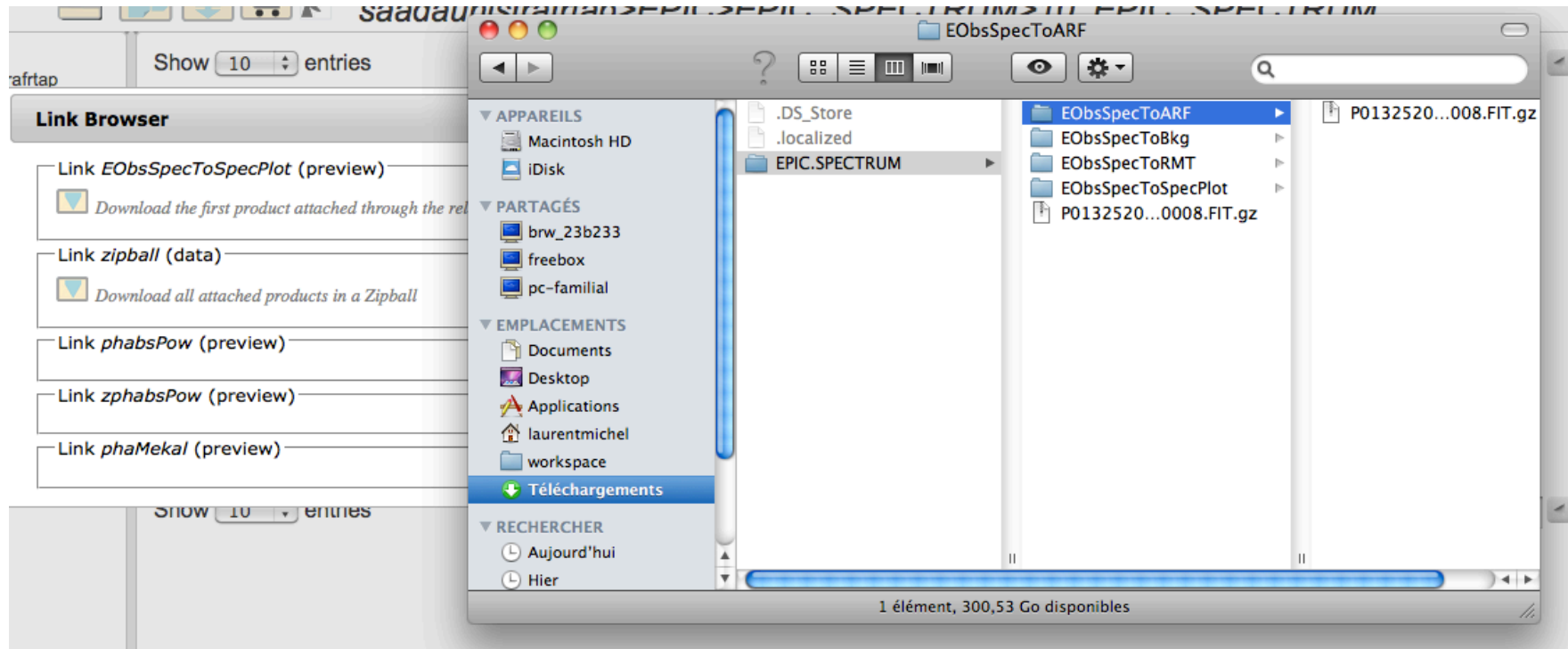
- Link *EObsSpecToSpecPlot* (preview)
 Download the first product attached through the relationship *EObsSpecToSpecPlot*
- Link *zipball* (data)
 Download all attached products in a Zipball
- Link *phabsPow* (preview)
- Link *zphabsPow* (preview)
- Link *phaMekal* (preview)

110.10406	-31.430465	0.0000000	4095.0000
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Demo Screenshot: precomputed Preview



Demo Screenshot: Zipball download



Demo Screenshot: Model Fitting Result

