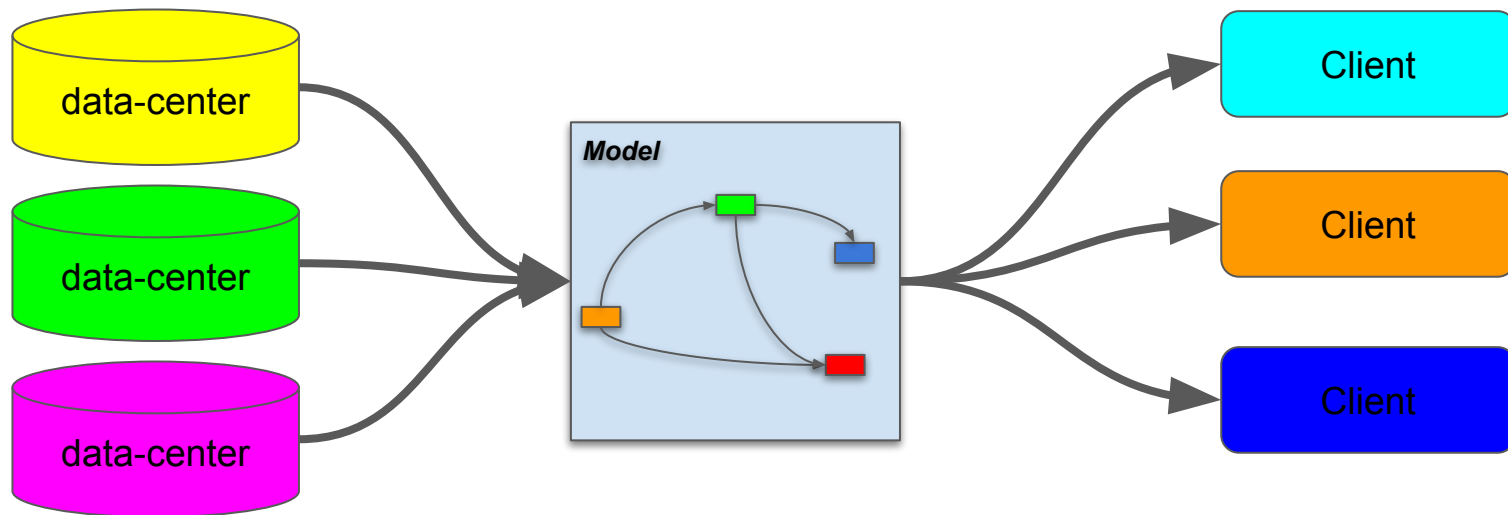


# How to use Data Models to Enhance **Interoperability** in the VO

Let's talk mapping syntax

# Model a Common Language



## Using Models

- Data representation shared by all stakeholders
- Support complex data arrangements
- As if we all spoke the same language

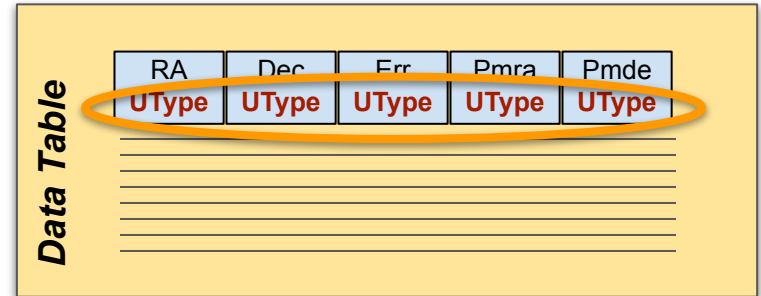
*See Jesus talk DM session #1*

## But data almost never match any VO model

- The choice of the data layout is never driven by VO model considerations
- Often released in some tabular format

# 2 Ways to Map VOTable Data on Models

- **Modifying <Fields>**
  - Using model UTypes
  - Data hierarchy modeled by <GROUPS>
  - Used for simple protocols
- **Mapping <FIELD> on a Model**
  - Works with legacy data
  - Requires a specific framework - **the present topic**

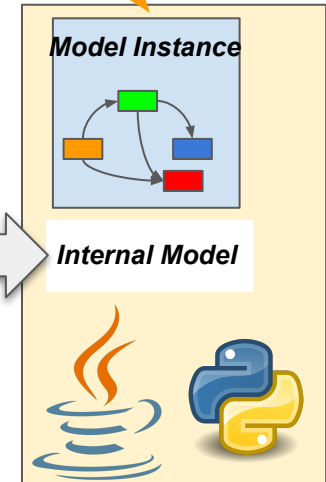
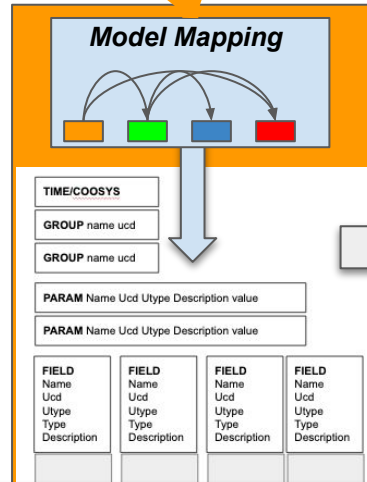
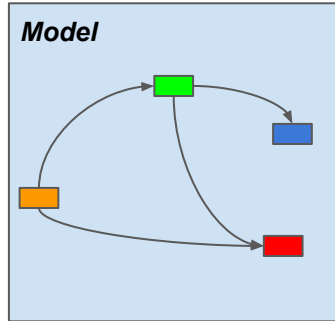


The diagram shows a table with five columns: RA, Dec, Err, Pmra, and Pmde. Below the column headers, the text 'UType' is written in red in each of the five cells. An orange oval highlights this row of 'UType' text. To the left of the table, the text 'Data Table' is written vertically. Below the table, there are several horizontal lines representing data rows.

RA	Dec	Err	Pmra	Pmde
UType	UType	UType	UType	UType

- **Annotating VOTables**

- Adding model views to VOTable
- Not breaking existing stuff



**Model**

- Quantities **definition**
- **roles** played by all quantities
- The way quantities are **nested**
- The way quantities **relate** each to other

**Model Mapping**

- Bridge binding model(s) and data
- Add missing description elements

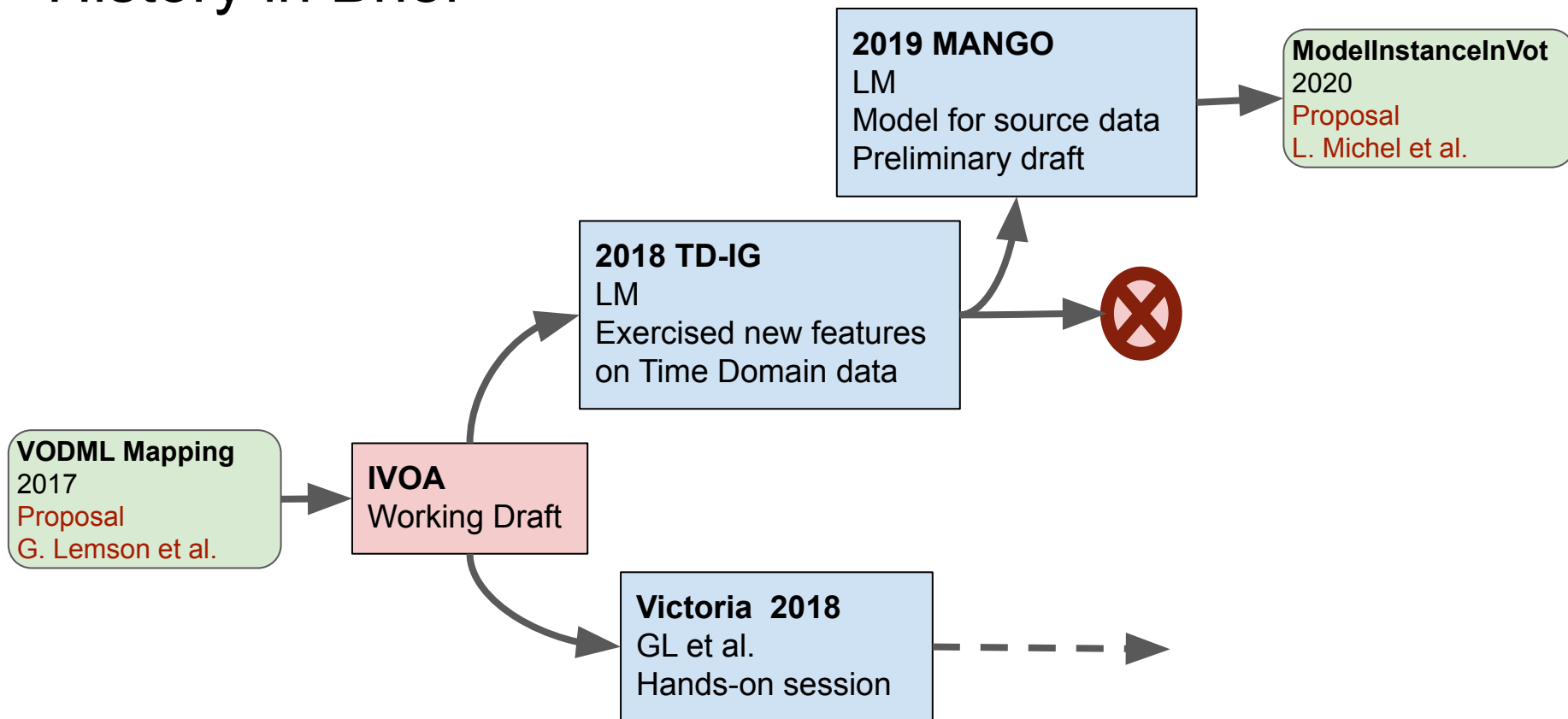
**Gain for model-aware clients**

- Getting better meta-data
- Retrieving data relationships
- Accessing data by model classes instead of columns

# Not Breaking the VOTable Schema

- **The mapping is written in pure XML**
  - Located out of the the resources
  - Allow nested structures
  - Freedom to setup the schema
- **The XML schema of the mapping is imported by the VOTable schema**
  - Allow the mapping syntax to have its own schema
  - Both schemas can evolve in a independent way
- **Avoiding name collisions between mapping and VOTable elements**

# History in Brief



# Workshop Sessions

- **Current situation**
  - 2 proposals
  - Merge desirable
- **Expected workshop returns**
  - Path for a compromise

# Agenda

## Session #1 Model users have the floor

Time: [Wednesday May 26 15:00 UTC](#)

Speaker	Title	Time	Material
Laurent Michel	Introduction	8'	
Jesus Salgado	Data Models: Homogeneous view for heterogeneous data	10+3	
Jean Michel Glorian	A developer's point of view on the use of models in the votable	12+3	
Matthias Fuessling	Science case requirement for CTA	10+3	

Moderator: [Jesus](#), Notetaker: [Jesus](#), notes: [Etherpad link](#)

## Session #2 Model users have the floor

Time: [Thursday May 27 15:00 UTC](#)

Speaker	Title	Time	Material
Laurent Michel	Introduction	4'	
Gilles Landais	Annotated VOTable in <a href="#">VizieR</a>	12+3	
Ian Evans	Chandra Science and DMs (TBD)	12+3	
Jean Marc Petit	Asteroids: astrometry, photometry, dynamics, survey modelling	10+3	
Laurent Michel	Binding <a href="#">PyVO</a> with MANGO	10+3	

Moderator: [Jesus](#), Notetaker: [Jesus](#), notes: [Etherpad link](#)

## Session #3 Let's talk mapping syntax

Time: [Friday May 28 15:00 UTC](#)

Speaker	Title	Time	Material
Laurent Michel	Introduction	5'	
Gerard Lemson		10+3	
Laurent Michel		10+3	
Mark Cresitello Dittmar	Summary	10+3	
Gerard Lemson	<a href="#">VODML mapper tool</a>	10+3	