Elettra Sincrotrone Trieste

Elettra
Sincrotrone
Trieste

Remote Experiments

- approach
- technologies
- in-house developments
- challenges

George Kourousias

Approach

Hardware
- TANGO, TCP/IP servers, REST

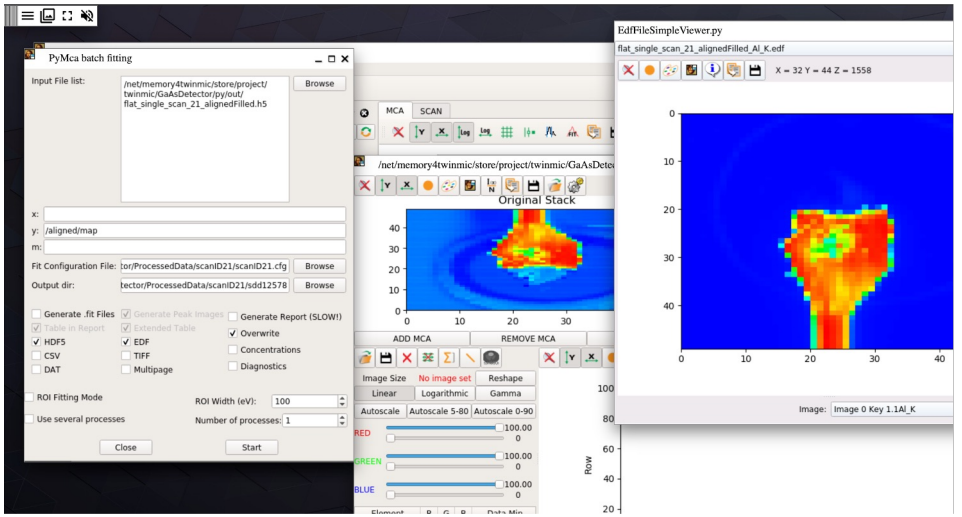
Software
- Remote desktops
- Web-interfaces

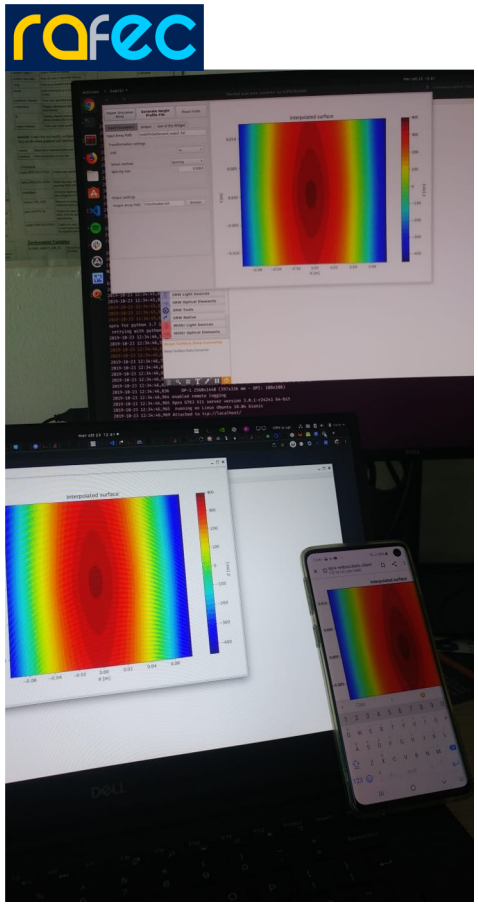
Auxiliaries
- labbook
- smart-glasses, robots

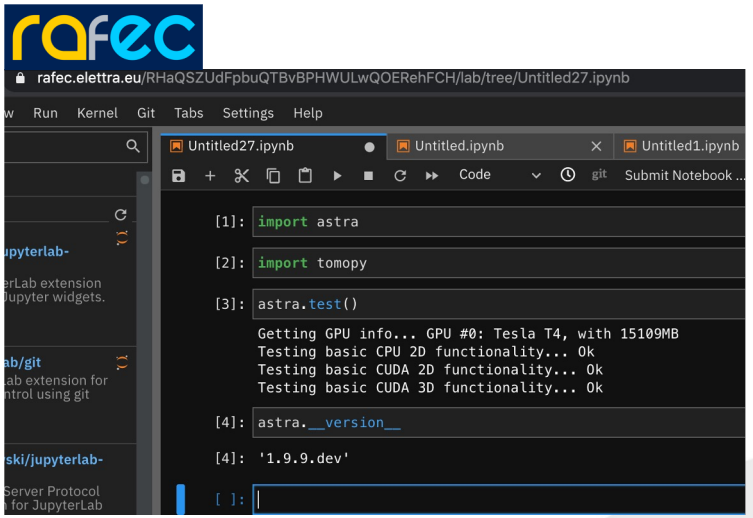
Necessities
- security, management, online FAIR data

In-house developments: RAFEC

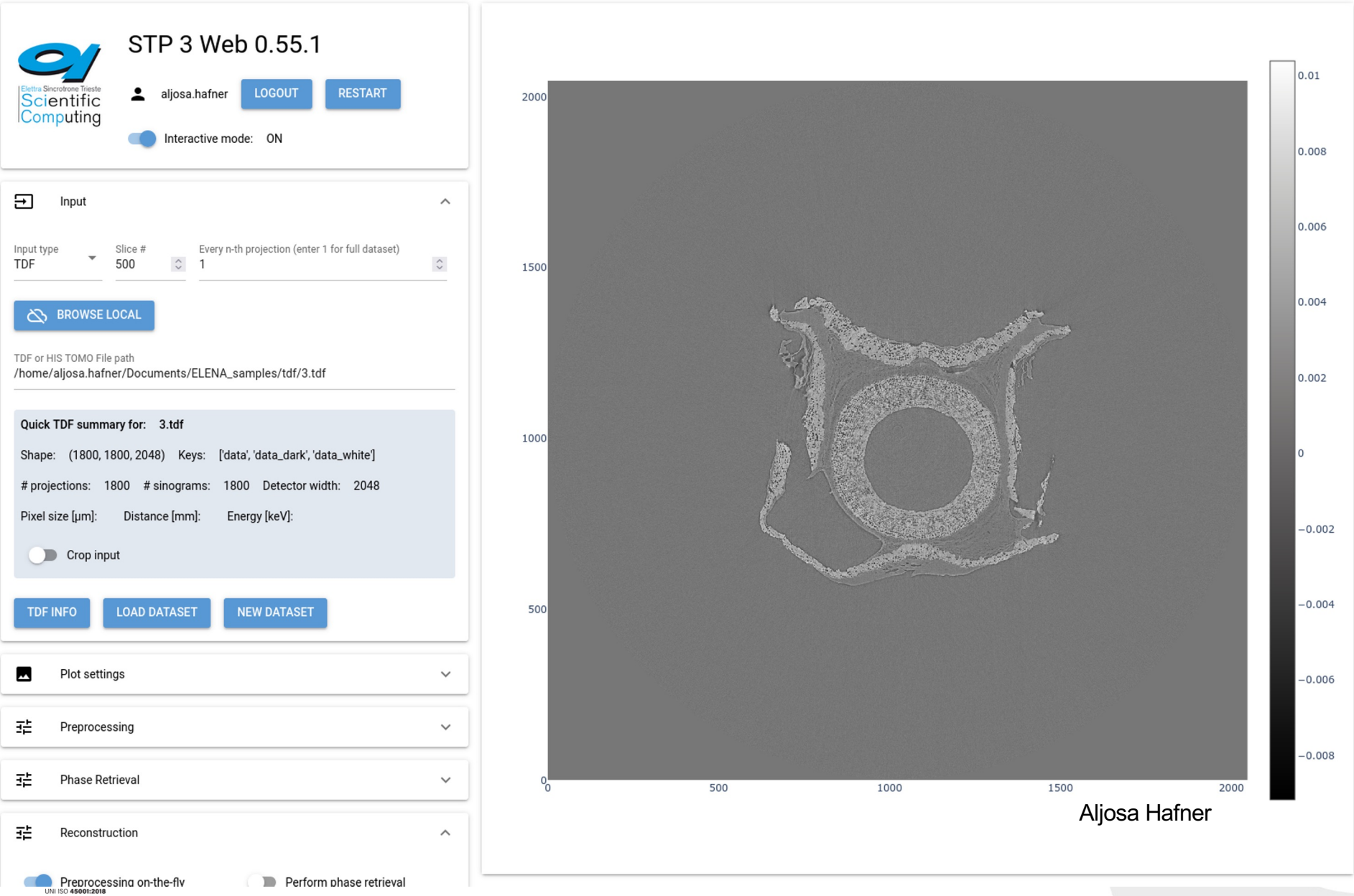
Remote apps
XPRA-based





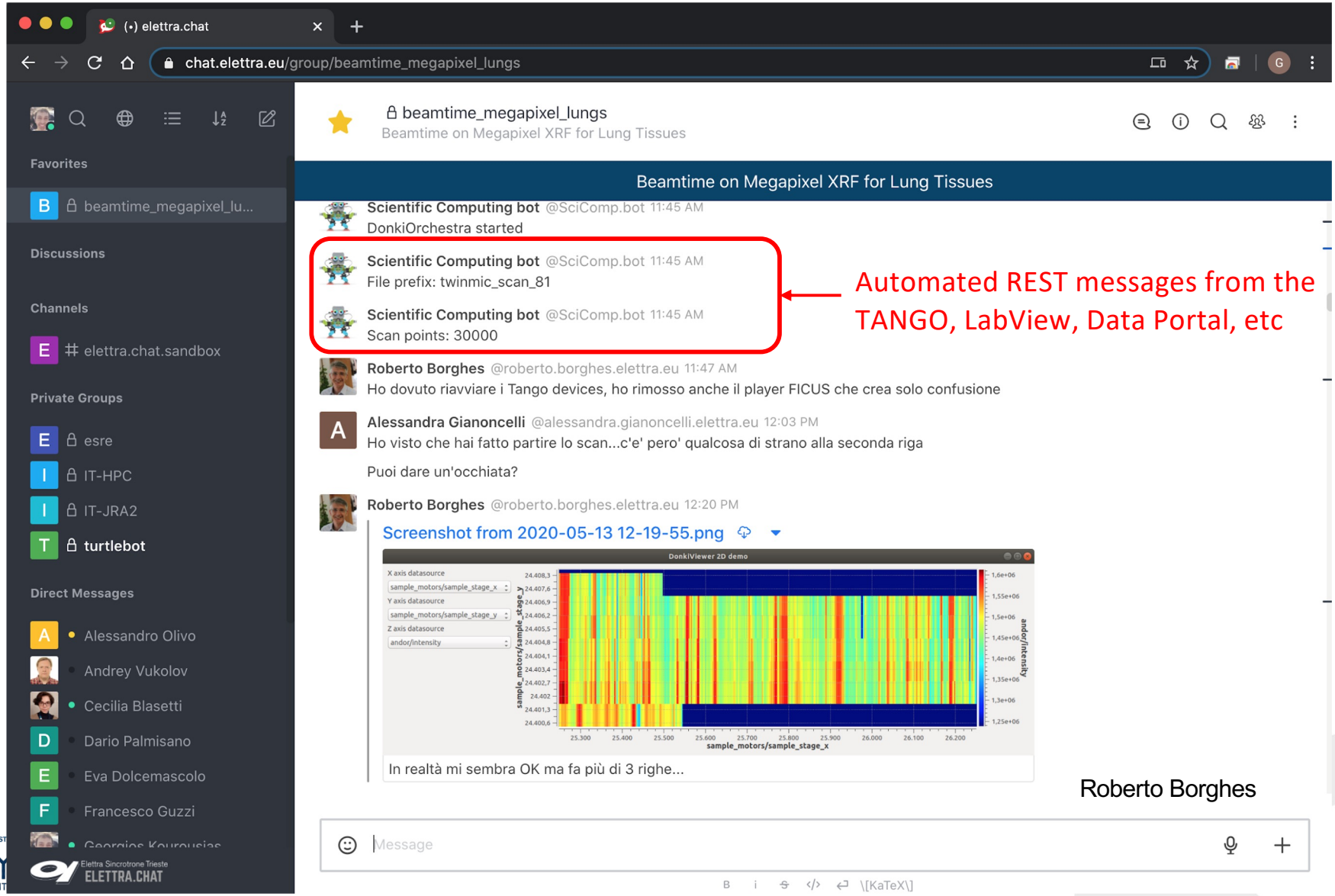


In-house developments: Web-based CT analysis (STP3)

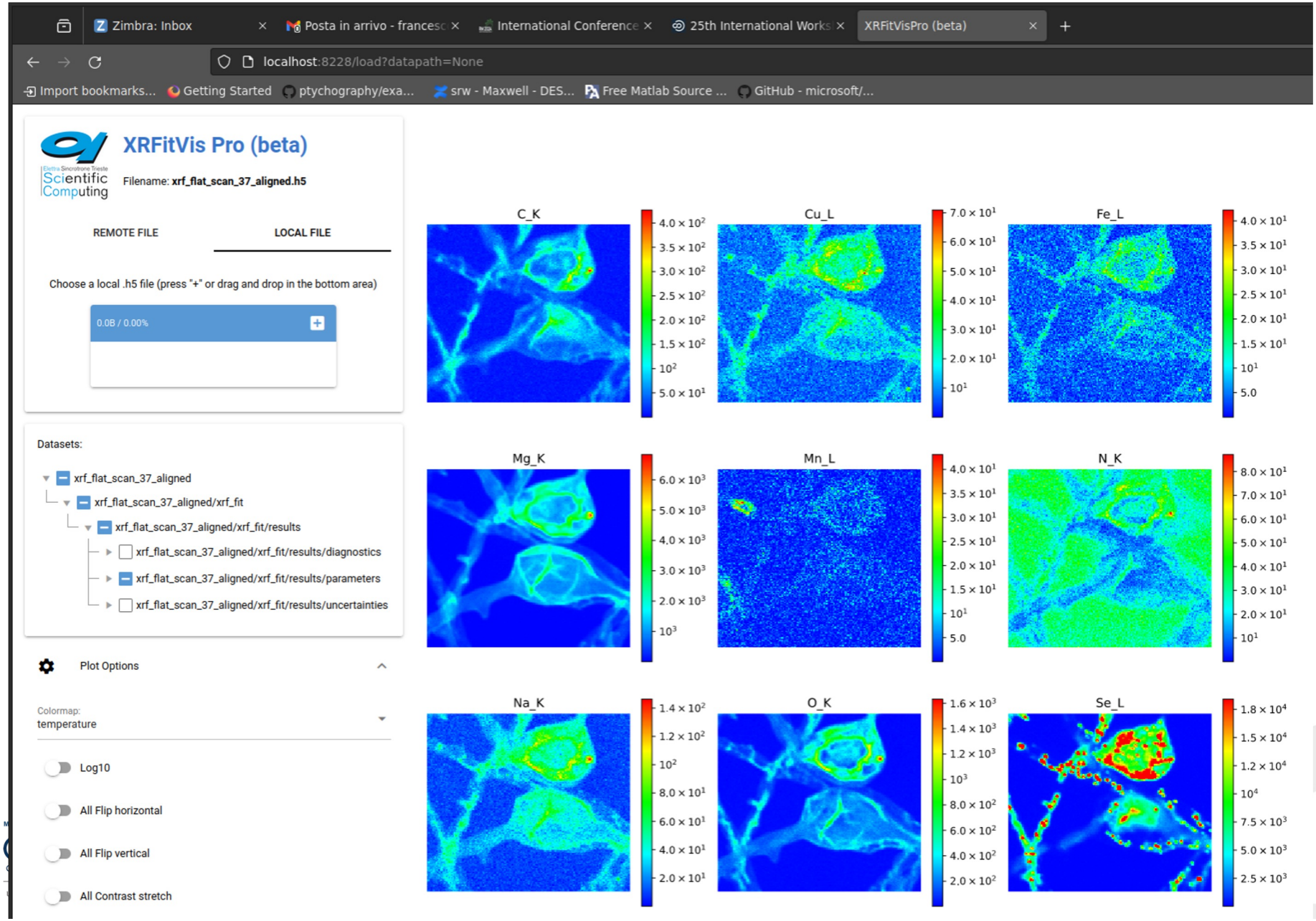


Aljosa Hafner

In-house developments: DonkiLog WhatsApp-like log keeping



In-house developments: PyMCA results visualisation on the web (EDFviewer)



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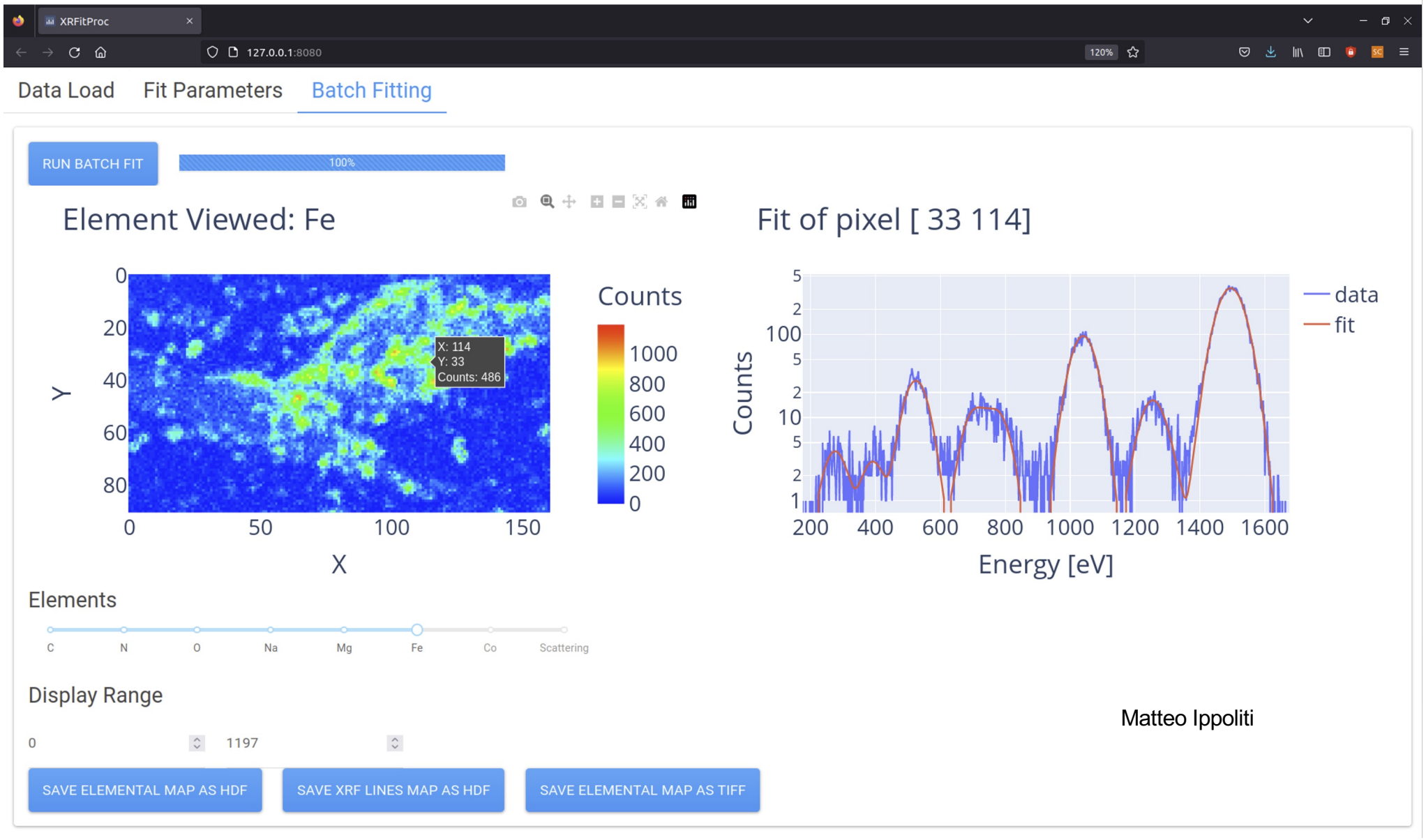
In-house developments: XRF fitting on the web



Matteo Ippoliti

In-house developments: 3D Figure visualisation

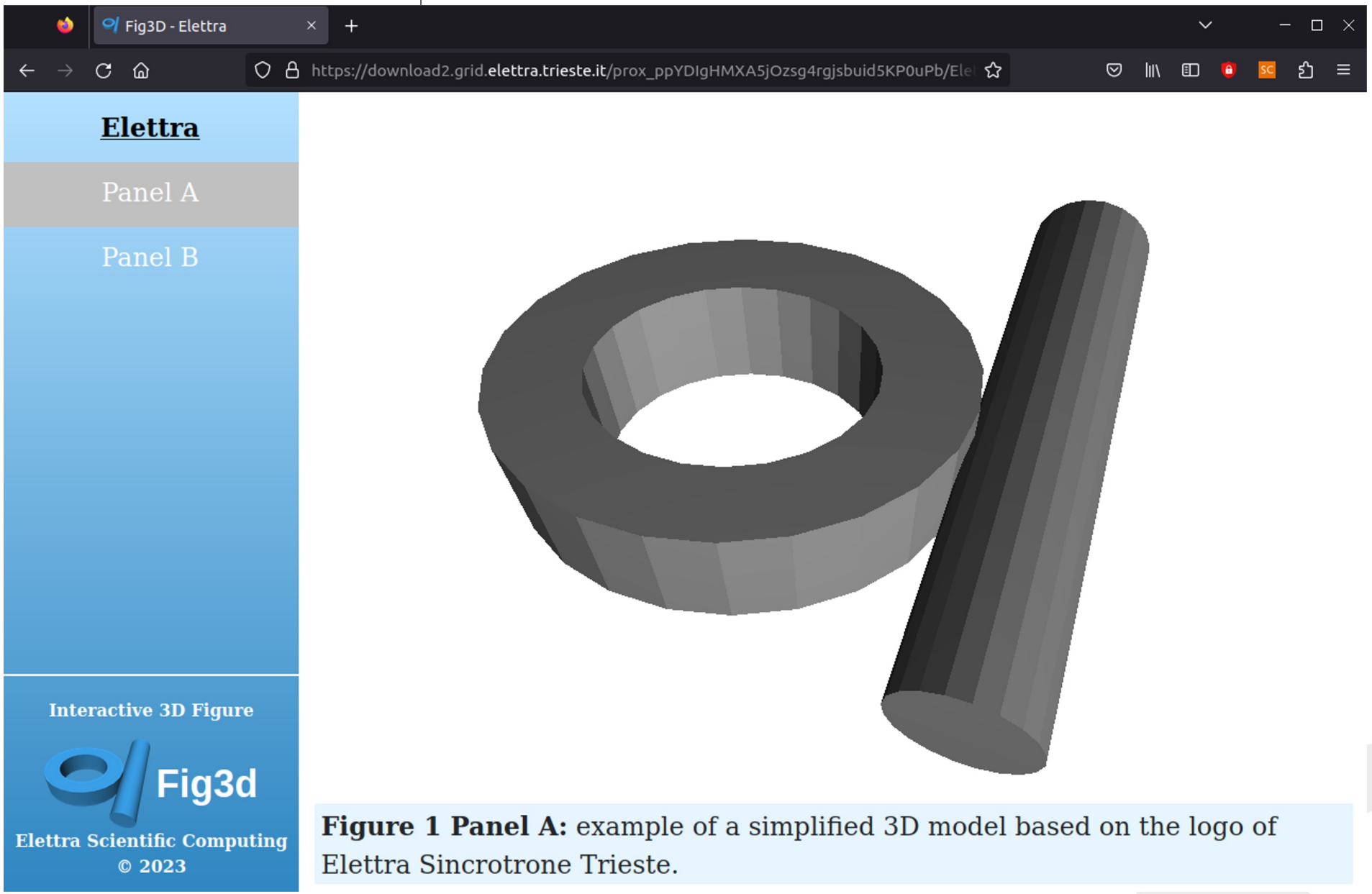
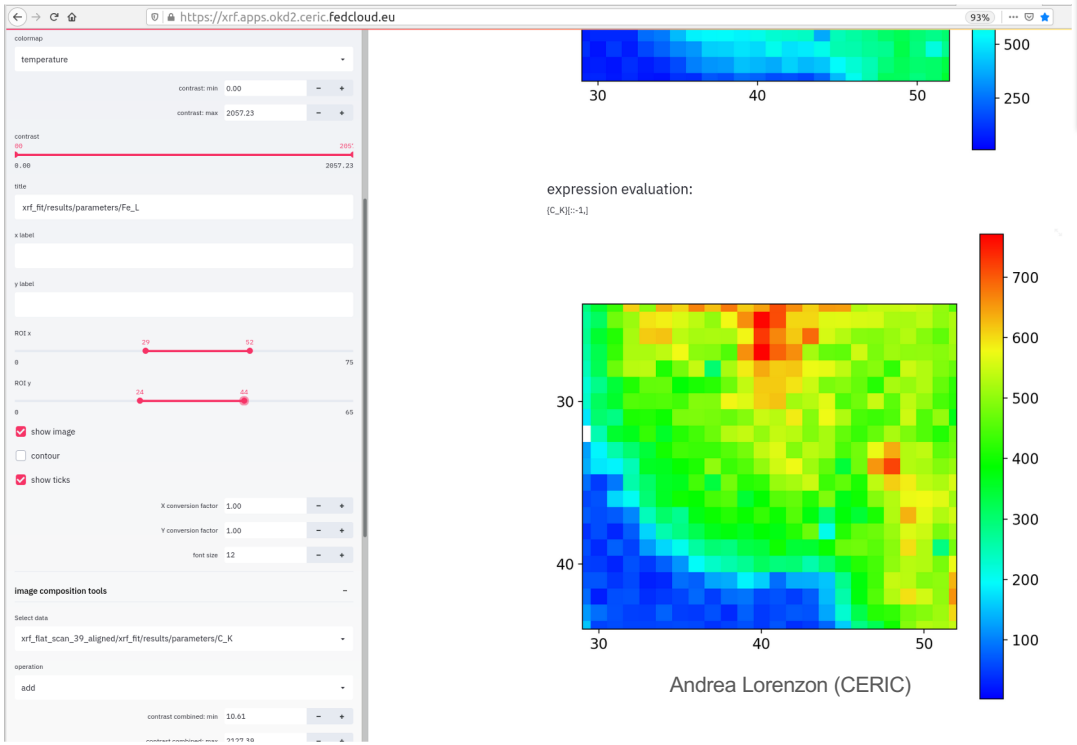
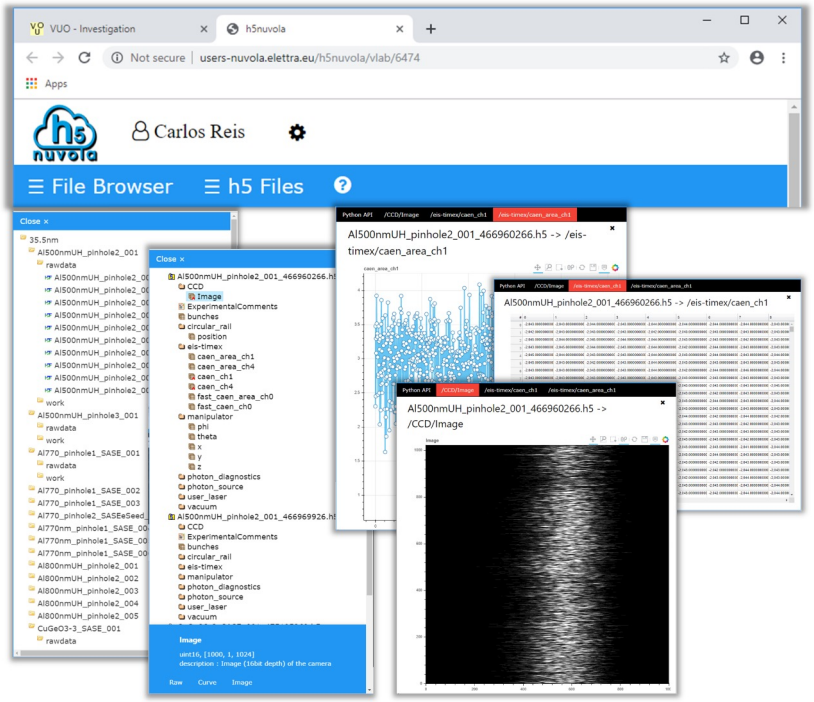


Figure 1 Panel A: example of a simplified 3D model based on the logo of Elettra Sincrotrone Trieste.

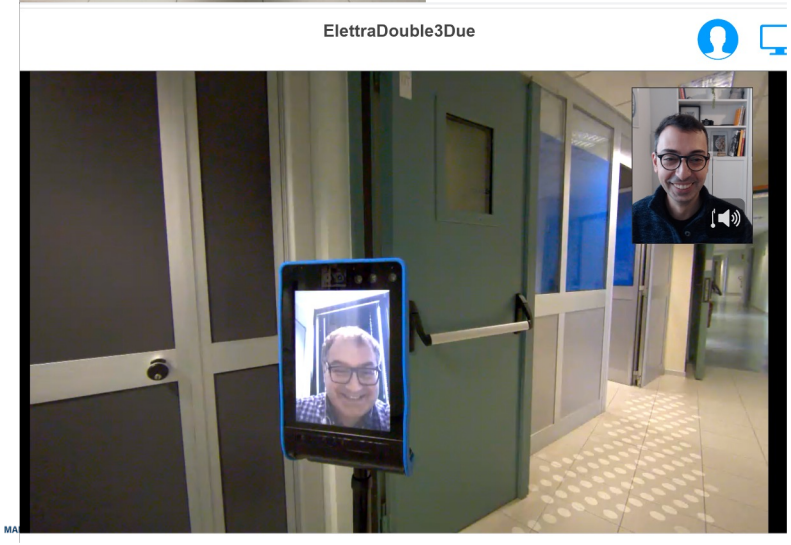
In-house developments: HDF5 viewer (H5Nuvola)





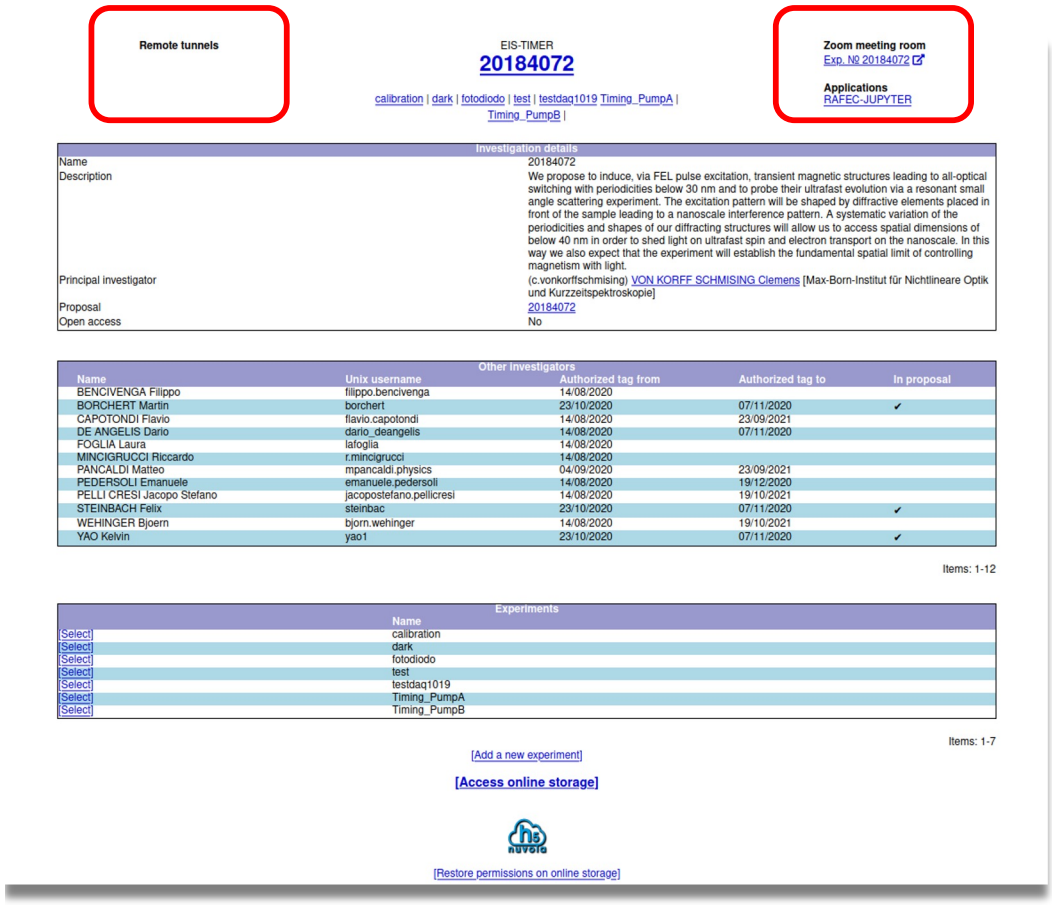
CERTIFIED MANAGEMENT SYSTEM
CERTIQUALITY
UNI EN ISO 9001:2015
UNI ISO 45001:2018

experimenting with new devices and modalities



interesting tech but **NOT** used enough

In-house developments: Landing page with all available systems for each proposal (VUO)



Remote tunnels

EIS-TIMER
20184072

calibration | dark | fotodiodo | test | testdaq1019 Timing_PumpA | Timing_PumpB |

Zoom meeting room
Exp. N0 20184072

Applications
RAFEC-JUPYTER

Investigation details

Name	20184072
Description	We propose to induce, via FEL pulse excitation, transient magnetic structures leading to all-optical switching with periodicities below 30 nm and to probe their ultrafast evolution via a resonant small angle scattering experiment. The excitation pattern will be shaped by diffractive elements placed in front of the sample leading to a nanoscale interference pattern. A systematic variation of the periodicities and shapes of our diffracting structures will allow us to access spatial dimensions of below 40 nm in order to shed light on ultrafast spin and electron transport on the nanoscale. In this way we also expect that the experiment will establish the fundamental spatial limit of controlling magnetism with light.
Principal investigator	(c.vonkorffschmising) VON KORFF SCHMISING Clemens [Max-Born-Institut für Nichtlineare Optik und Kurzzeitspektroskopie]
Proposal	20184072
Open access	No

Other investigators

Name	Unix username	Authorized tag from	Authorized tag to	In proposal
BENCIVENGA Filippo	filippo.bencivenga	14/08/2020		
BORCHERT Martin	borchert	23/10/2020	07/11/2020	✔
CAPOTONDI Flavio	flavio.capotondi	14/08/2020	23/09/2021	
DE ANGELIS Dario	dario_deangelis	14/08/2020	07/11/2020	
FOGLIA Laura	lafoglia	14/08/2020		
MINCIGRUCCI Riccardo	r.mincigrucci	14/08/2020		
PANCALDI Matteo	mpancaldi.physics	04/09/2020	23/09/2021	
PEDERSOLI Emanuele	emanuele.pedersoli	14/08/2020	19/12/2020	
PELLI CRESI Jacopo Stefano	jacopostefano.pellicresi	14/08/2020	19/10/2021	
STEINBACH Felix	steinbac	23/10/2020	07/11/2020	✔
WEHINGER Bjoern	bjorn.wehinger	14/08/2020	19/10/2021	
YAO Kelvin	yao1	23/10/2020	07/11/2020	✔

Items: 1-12

Experiments

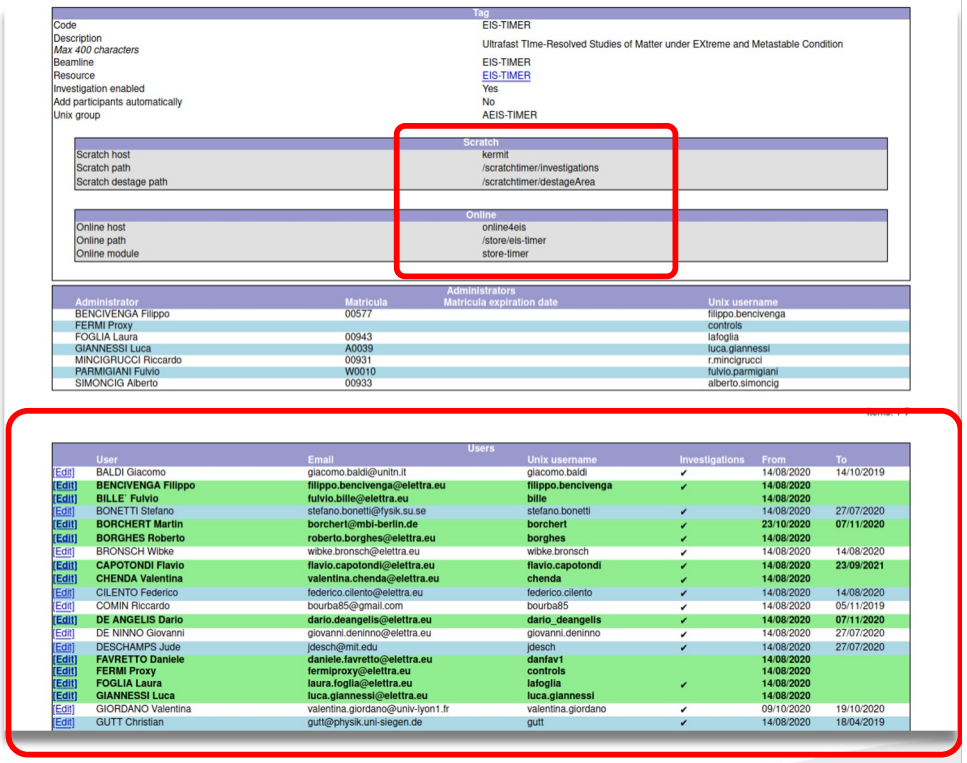
	Name
[Select]	calibration
[Select]	dark
[Select]	fotodiodo
[Select]	test
[Select]	testdaq1019
[Select]	Timing_PumpA
[Select]	Timing_PumpB

Items: 1-7

[Add a new experiment]

[Access online storage]

[Restore permissions on online storage]



Tag

Code	EIS-TIMER
Description	
Max 400 characters	Ultrafast Time-Resolved Studies of Matter under EXtreme and Metastable Condition
Beamline	EIS-TIMER
Resource	EIS-TIMER
Investigation enabled	Yes
Add participants automatically	No
Unix group	AEIS-TIMER

Scratch

Scratch host	kermit
Scratch path	/scratchtimer/investigations
Scratch destage path	/scratchtimer/destageArea

Online

Online host	online4eis
Online path	/store/eis-timer
Online module	store-timer

Administrators

Administrator	Matricula	Matricula expiration date	Unix username
BENCIVENGA Filippo	00577		filippo.bencivenga
FERMI Proxy			controls
FOGLIA Laura	00943		lafoglia
GIANNESSI Luca	A0039		luca.giannessi
MINCIGRUCCI Riccardo	00931		r.mincigrucci
PARMIGIANI Fulvio	W0010		fulvio.parmigiani
SIMONCIG Alberto	00933		alberto.simoncig

Users

	User	Email	Unix username	Investigations	From	To
[Edit]	BALDI Giacomo	giacomo.baldi@unitn.it	giacomo.baldi	✔	14/08/2020	14/10/2019
[Edit]	**BENCIVENGA Filippo**	**filippo.bencivenga@elettra.eu**	**filippo.bencivenga**	✔	**14/08/2020**	
[Edit]	**BILLE` Fulvio**	**fulvio.bille@elettra.eu**	**bille**		**14/08/2020**	
[Edit]	BONETTI Stefano	stefano.bonetti@fysik.su.se	stefano.bonetti	✔	14/08/2020	27/07/2020
[Edit]	**BORCHERT Martin**	**borchert@mbi-berlin.de**	**borchert**	✔	**23/10/2020**	**07/11/2020**
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[Edit]	**CAPOTONDI Flavio**	**flavio.capotondi@elettra.eu**	**flavio.capotondi**	✔	**14/08/2020**	**23/09/2021**
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[Edit]	CILENTO Federico	federico.cilento@elettra.eu	federico.cilento	✔	14/08/2020	14/08/2020
[Edit]	COMIN Riccardo	bourba85@gmail.com	bourba85	✔	14/08/2020	05/11/2019
[Edit]	**DE ANGELIS Dario**	**dario.deangelis@elettra.eu**	**dario_deangelis**	✔	**14/08/2020**	**07/11/2020**
[Edit]	DE NINNO Giovanni	giovanni.deninno@elettra.eu	giovanni.deninno	✔	14/08/2020	27/07/2020
[Edit]	DESCHAMPS Jude	jdesch@mit.edu	jdesch	✔	14/08/2020	27/07/2020
[Edit]	**FAVRETTO Daniele**	**daniele.favretto@elettra.eu**	**danfav1**		**14/08/2020**	
[Edit]	**FERMI Proxy**	**fermiproxy@elettra.eu**	**controls**		**14/08/2020**	
[Edit]	**FOGLIA Laura**	**laura.foglia@elettra.eu**	**lafoglia**	✔	**14/08/2020**	
[Edit]	**GIANNESSI Luca**	**luca.giannessi@elettra.eu**	**luca.giannessi**		**14/08/2020**	
[Edit]	GIORDANO Valentina	valentina.giordano@univ-lyon1.fr	valentina.giordano	✔	09/10/2020	19/10/2020
[Edit]	GUTT Christian	gutt@physik.uni-siegen.de	gutt	✔	14/08/2020	18/04/2019

Focused project on Essential Remotisation (ESRE)

- Focus on : data, workstations, and novel systems
- Puts together technologies and expertise from different groups
- hand-in-hand with Elettra IT, CERIC PANOSC, ExPaNDS, and Elettra & FERMI beamlines
- It assisted beamline experiment but can provide solutions to a wider audience

Challenges and key takes

- remotisation helps User Access
  - boosted during the pandemic - helps also nowdays
- Web-based is the way to go
  - older GUIs/panels (TANGO ecosystem) tend to be standalone
- Lots of in-house developments
  - all Open Source but highly custom to specific needs
- Advanced tech like robots are interesting
  - but not utilised enough
- Focused projects on remotisation are needed
  - there are projects but mostly focused on data
- It is a multidisciplinary approach
  - IT, beamlines, (and eventually User Office)

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Thank you!

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