

# Vladimír Ulman

Semi-automatic tracking  
in a distributed fashion  
with Mastodon

Friday Corona seminar @ MPI CBG

29<sup>th</sup> May 2020

# Mastodon

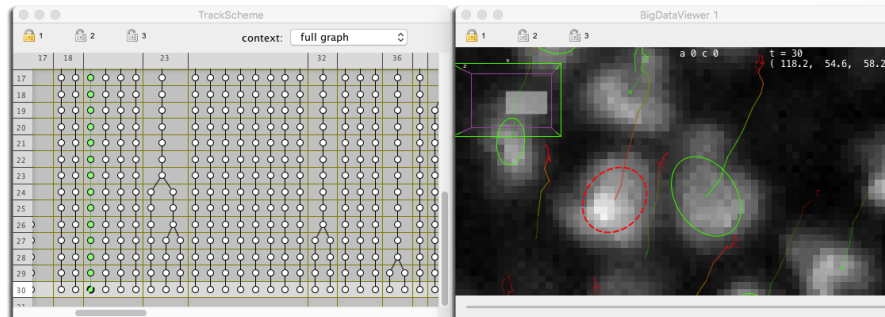
...our central tool for semi-automated cell tracking

- Successor of the popular TrackMate and MaMuT
- For large-scale tracking and track-editing
- User interface first
- Open source
- Plugin system



Jean-Yves Tinevez  
(Institut Pasteur)

Tobias Pietzsch  
(CSBD/CBG)



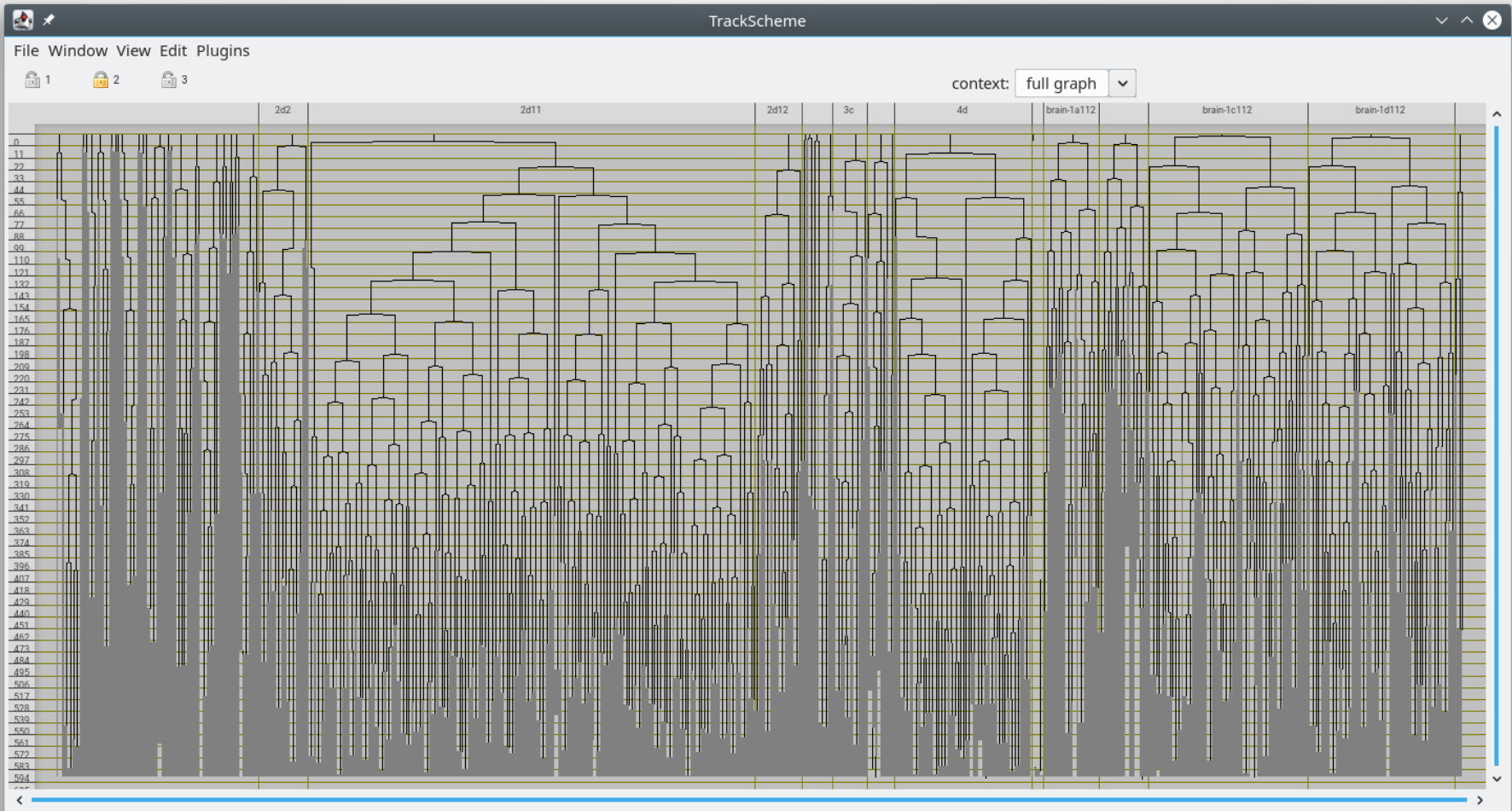
- Tinevez, JY. et al., "TrackMate: An open and extensible platform for single-particle tracking.", Methods 115, 2017
- Wolff, C. et al., "Multi-view light-sheet imaging and tracking with the MaMuT software reveals the cell lineage of a direct developing arthropod limb.", eLife, 2018

...and "it is in Fiji"™



# Mastodon

...in action on Mette's data

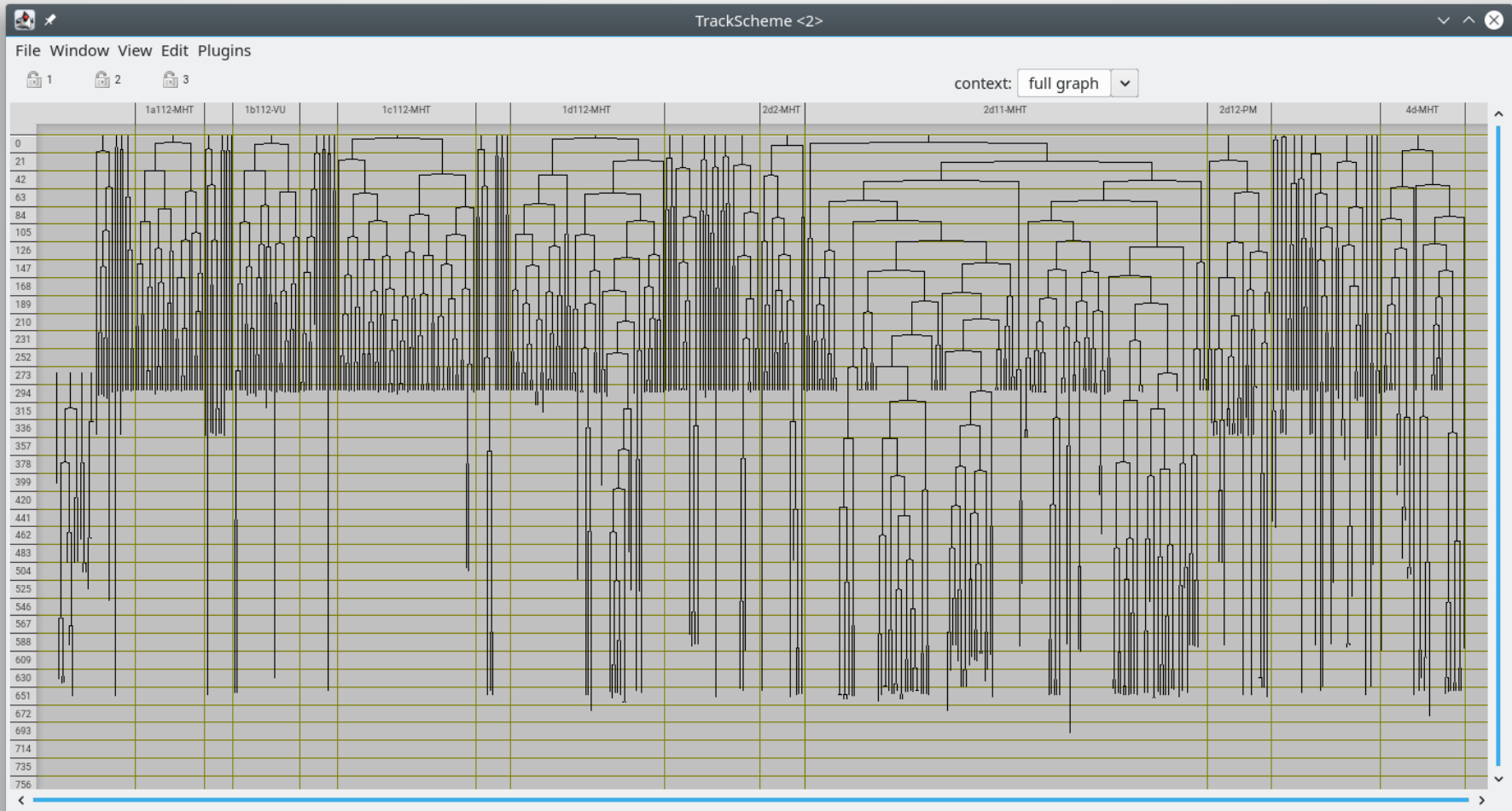


...and "it is in Fiji"™



# Mastodon

...in action on Mette's data

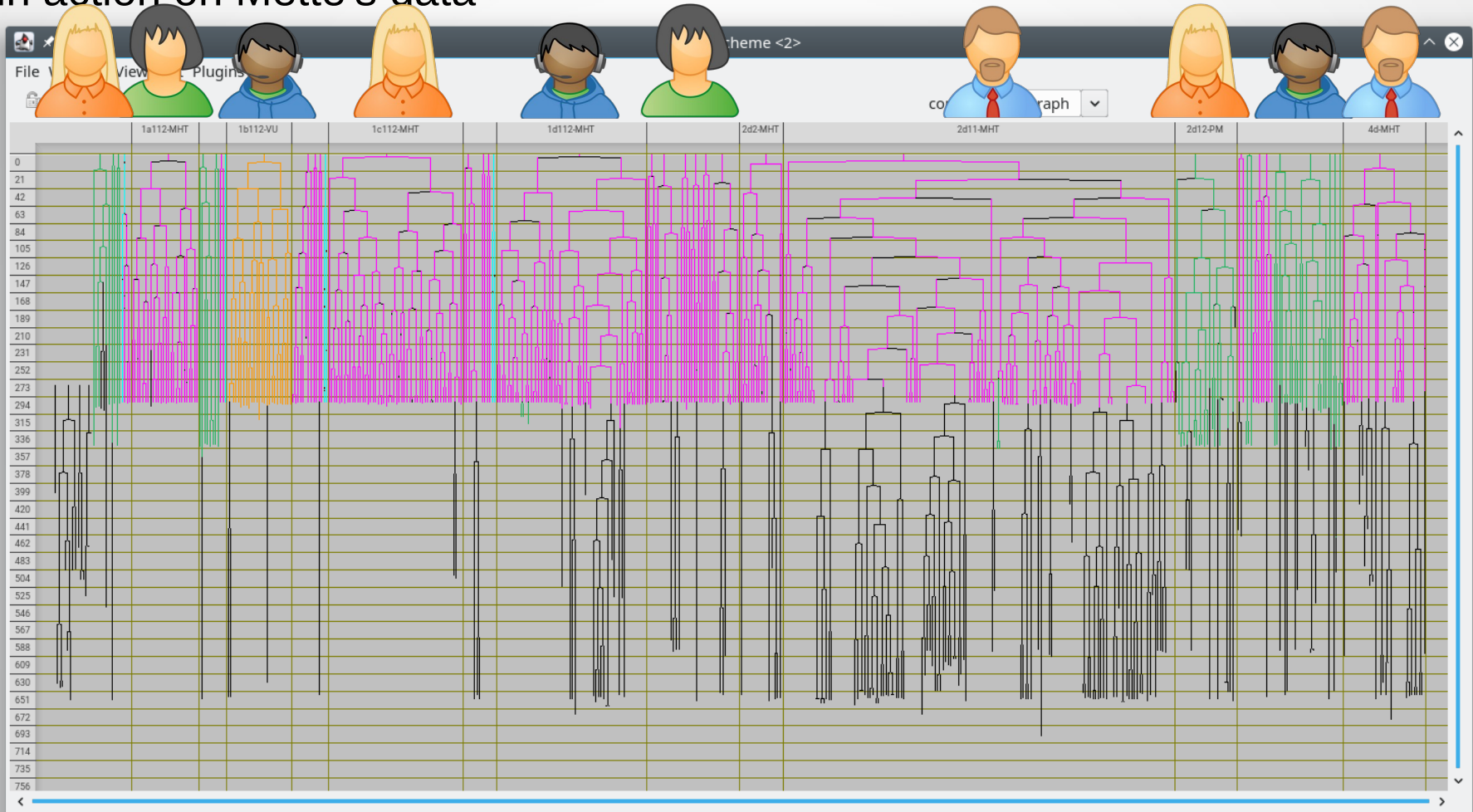


...and "it is in Fiji"™



# Mastodon

...in action on Mette's data



...and "it is in Fiji"™



# Mastodon-collaborative

...one shared image data, multiple distributed tracking

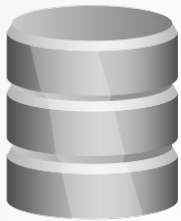
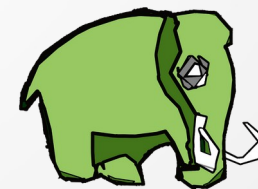


Image Server



Initial Lineage

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# Mastodon-collaborative

...one shared image data, multiple distributed tracking

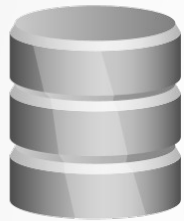
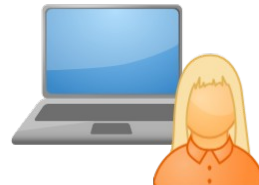


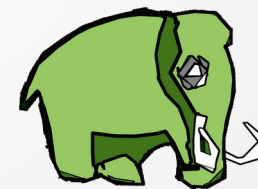
Image Server



Initial Lineage

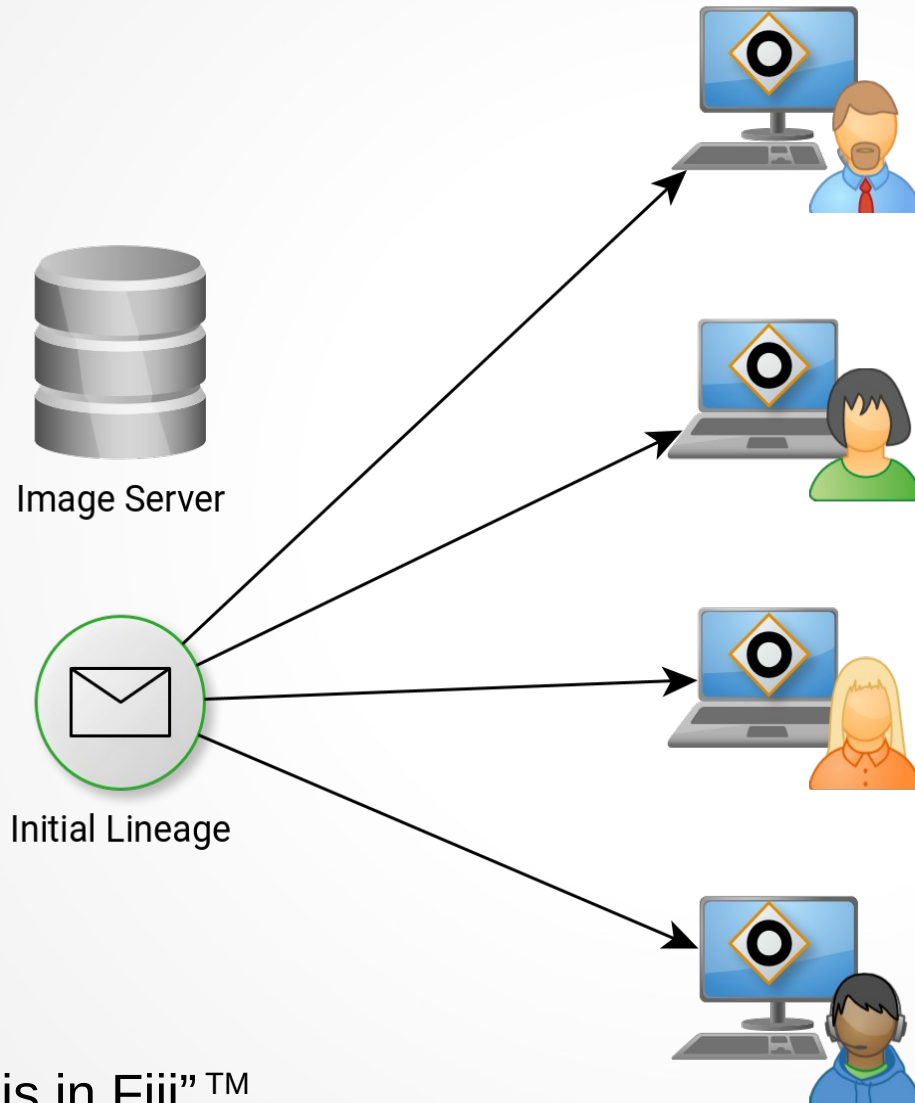


...and “it is in Fiji”™



# Mastodon-collaborative

...one shared image data, multiple distributed tracking



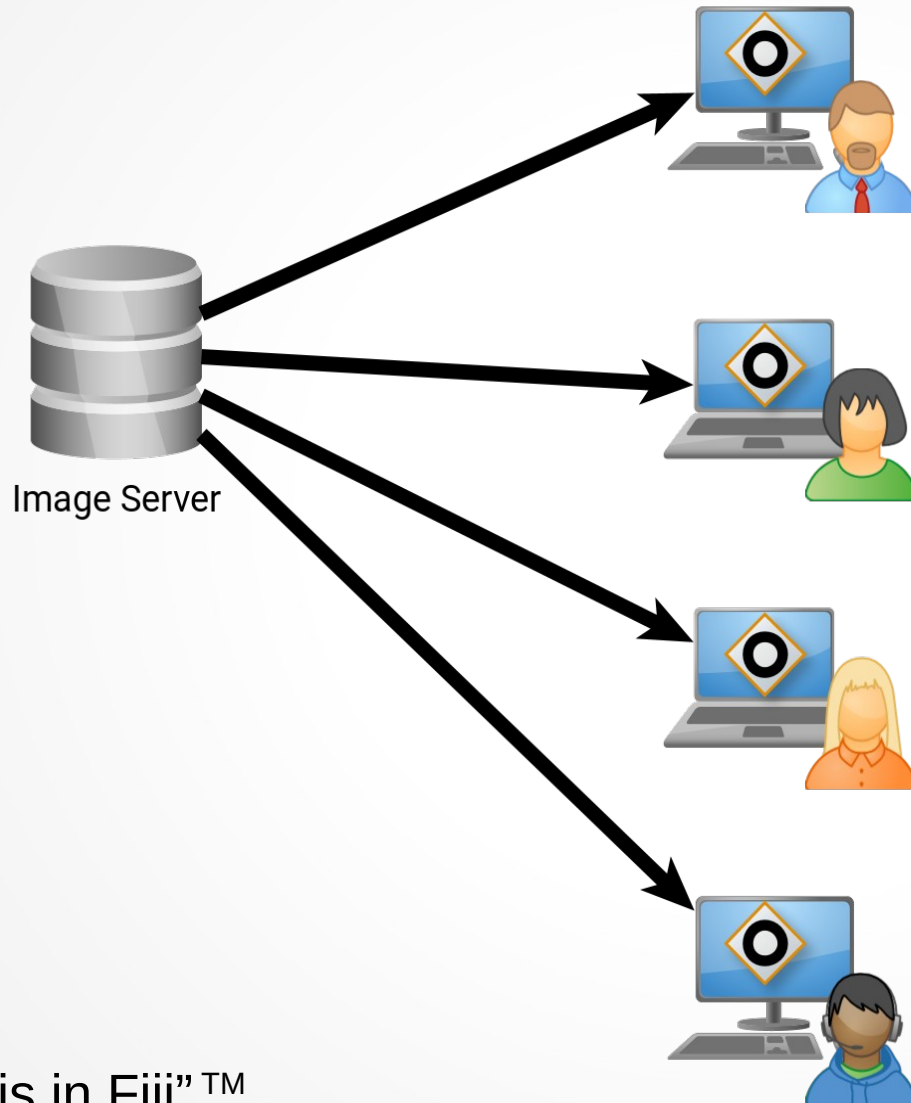
...and “it is in Fiji”™



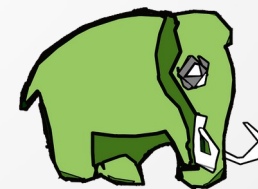


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...one shared image data, multiple distributed tracking

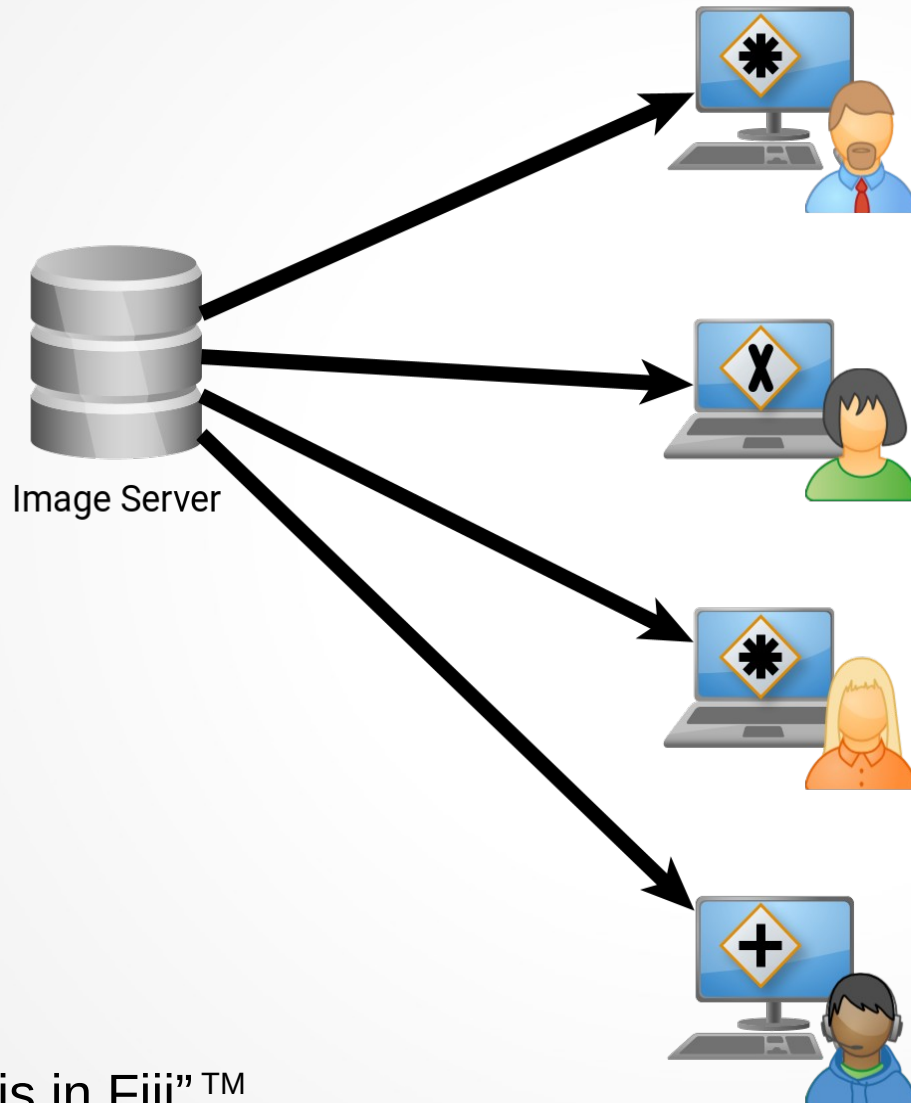


...and "it is in Fiji"™

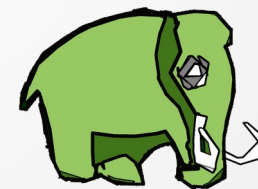


# Mastodon-collaborative

...one shared image data, multiple distributed tracking

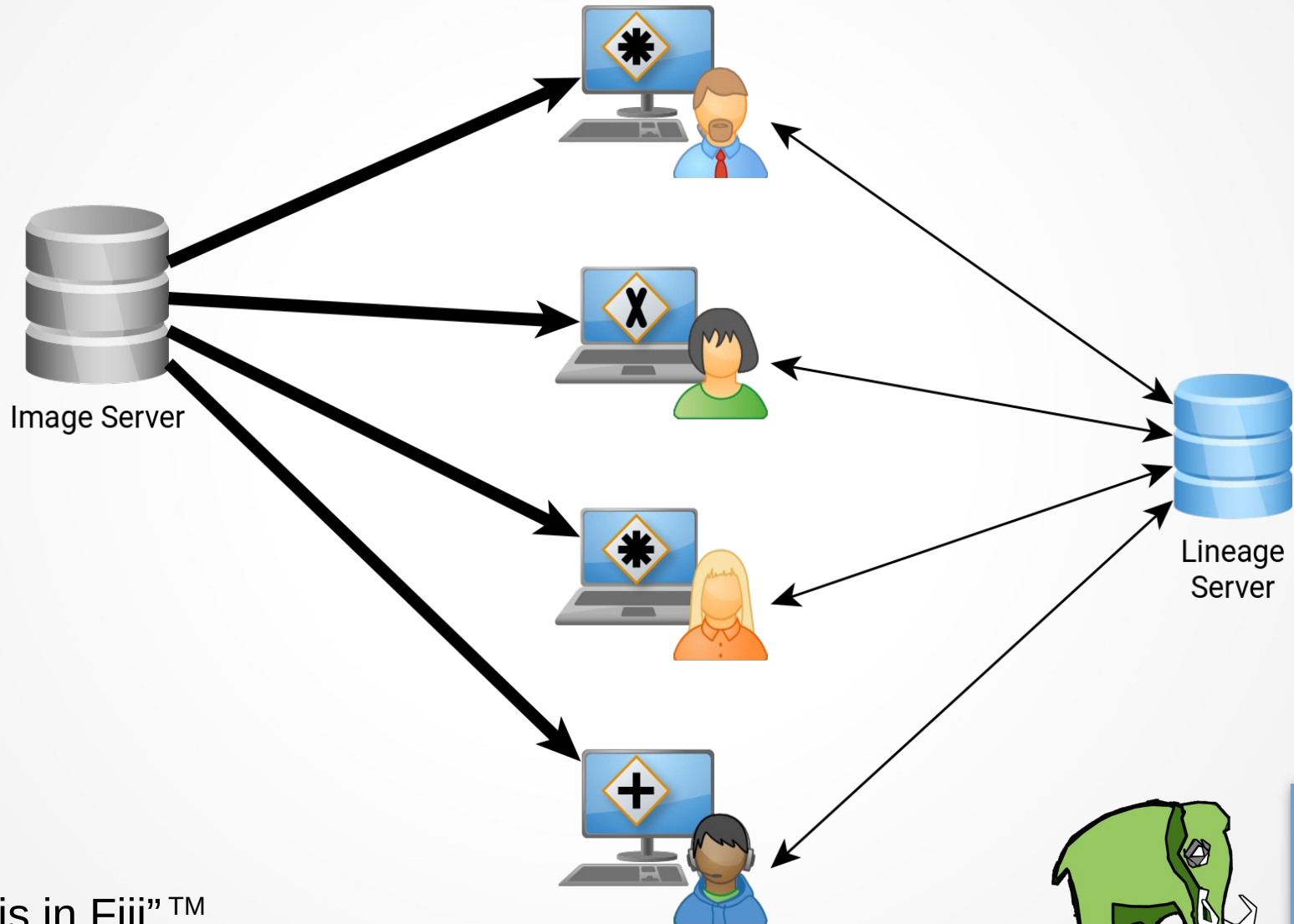


...and "it is in Fiji"™

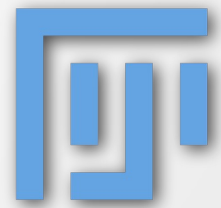
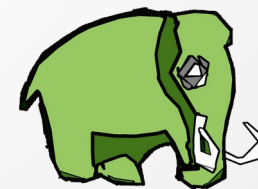


# Mastodon-collaborative

...one shared image data, multiple distributed tracking

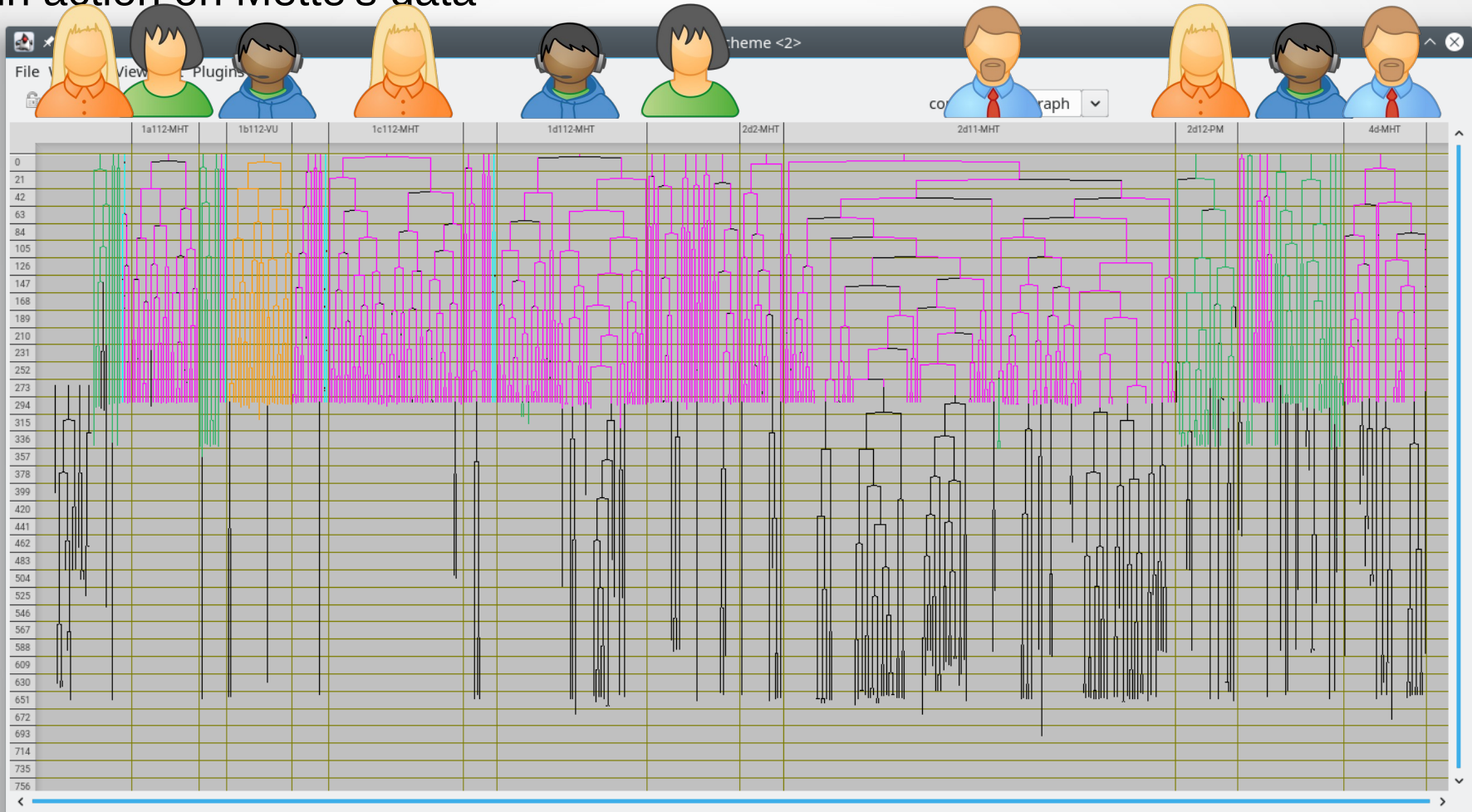


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# Mastodon-collaborative

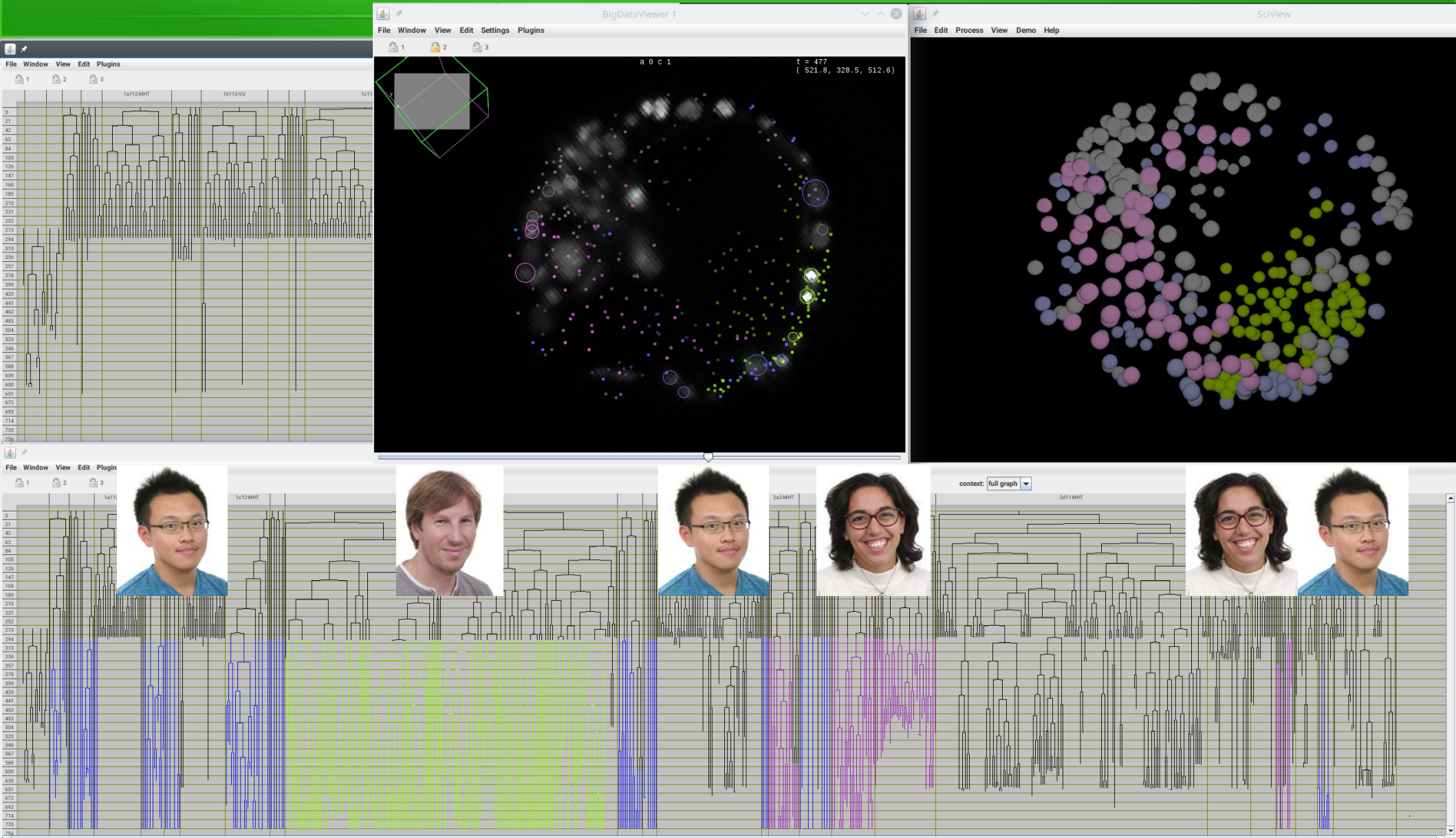
...in action on Mette's data



...and "it is in Fiji"™



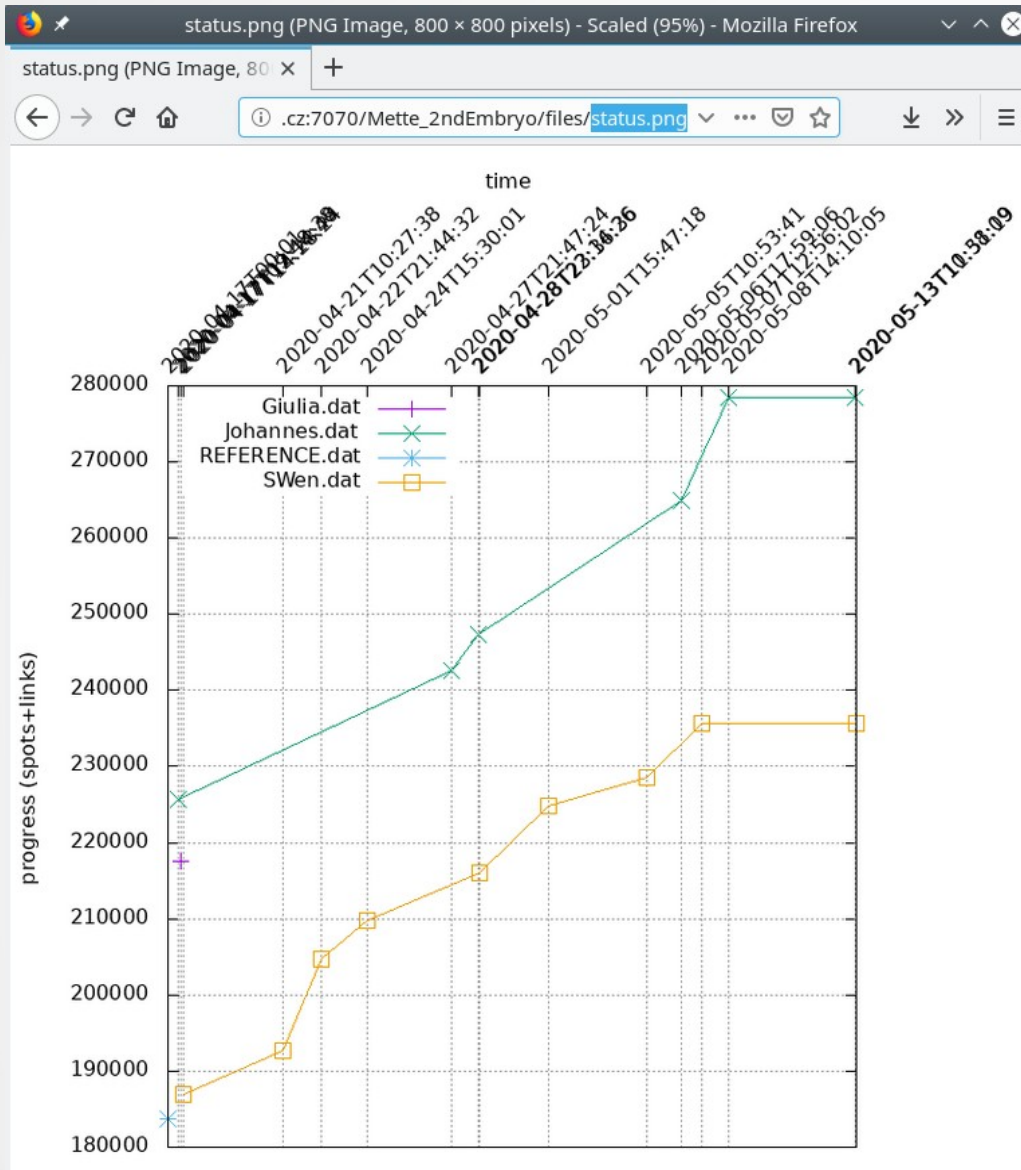
# Mastodon-collaborative



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# Mastodon-collaborative

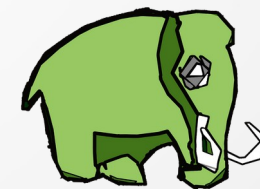


...lonely annotator → engaged racer



**THANK YOU!**

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# SciView

...our central tool  
for scientific visualizations

- Interactive visualization in VR for Fiji
- Graphics primitives & Meshes
- Out-of-core Volume Rendering
- Open source
- Plugin system
- Günther, U., Harrington, K.I., “Tales from the Trenches: Developing sciview, a new 3D viewer for the ImageJ community”, preprint, 2020
- Günther, U. et al., “scenery: Flexible Virtual Reality Visualization on the Java VM”, IEEE Visualization Conf., 2019

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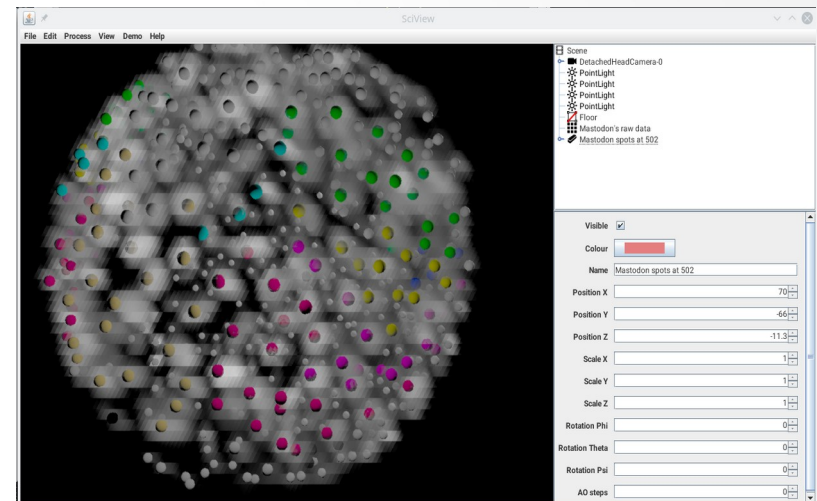
Kyle I. Harrington  
(Uni. Of Idaho)



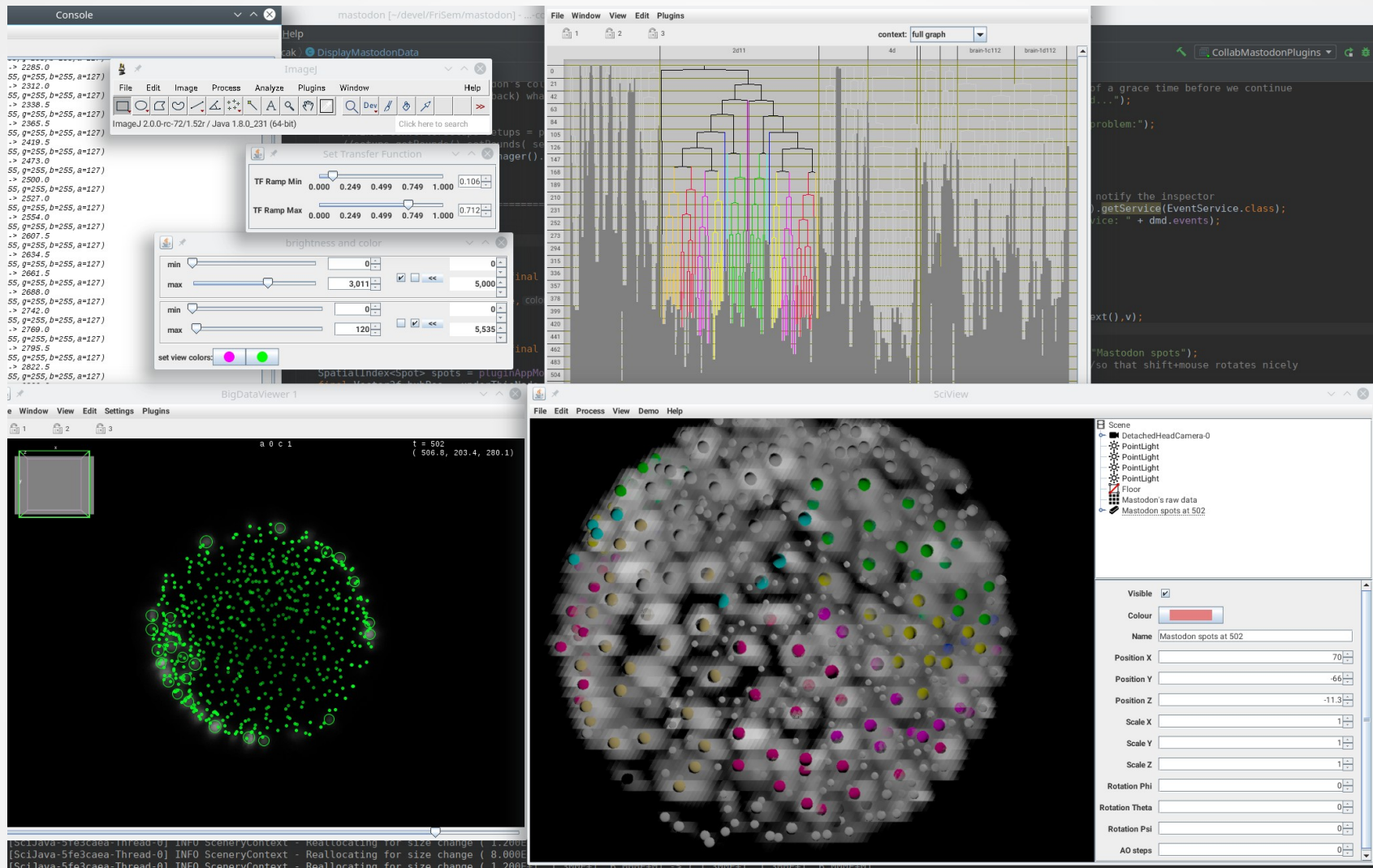
Ulrik Günther  
(CSBD/CBG)



Tobias Pietzsch  
(CSBD/CBG)



# Mastodon-SciView



(Work-In-Progress)

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