

A brief history of Graphs

Het ontwikkelen van applicaties voor de moderne Linux-desktop

\$whoami

Achtergrond

- Sjoerd Stendahl
- Achtergrond in Natuurkunde
 - Universiteit Twente
 - Linköping University
- IT-forensiek in Zweden
- GNOME-foundation lid

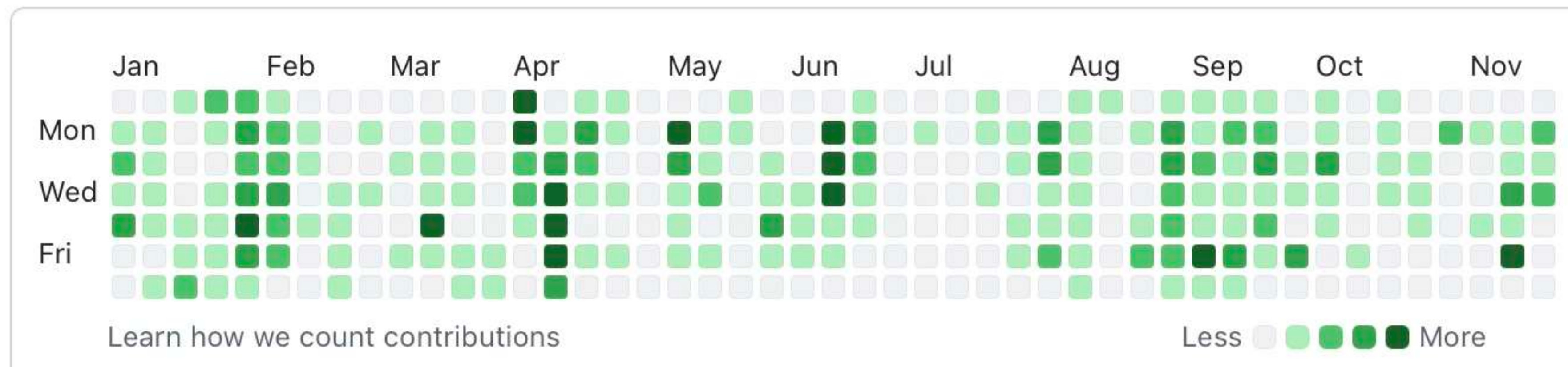


\$whoami

Applicaties

- Begonnen met het ontwikkelen van applicaties voor mijzelf
- Logging tool voor instrumentatie
- GISAXS-analyse voor “multilayers”
- “Database”-systeem voor meetdata (csv met statische links)
- Graphs, programma voor het plotten en manipuleren van data

2,248 contributions in 2023



GIScan

- Analyse van “multilayers” met GISAXS
- Bijzonder niche, bestaat geen software voor
- Eerst begonnen met een script met regex om interessante data te vinden
- Later een UI ontwikkeld voor de analyse, met geautomatiseerde metingen
- Eerste pakket gepubliceerd op Flathub

ACS Applied Materials & Interfaces > Vol 16/Issue 17 > Article

Open Access

   
Cite Share Jump to Expand

SURFACES, INTERFACES, AND APPLICATIONS | April 22, 2024

Morphology of Buried Interfaces in Ion-Assisted Magnetron Sputter-Deposited $^{11}\text{B}_4\text{C}$ -Containing Ni/Ti Multilayer Neutron Optics Investigated by Grazing-Incidence Small-Angle Scattering

Sjoerd Stendahl, Naureen Ghafoor, Matthias Schwartzkopf, Anton Zubayer, Jens Birch, and Fredrik Eriksson*

 Open PDF

Load data

Settings

Save vertical

Save horizontal

Hold vertical

Hold horizontal

Drag mode

Select ROI

Select background

Yoneda scan

Detector scan

FWHM scan (beta)

Find FWHM

ROI Coordinates:

Width:

Height:

0.0097

0.302

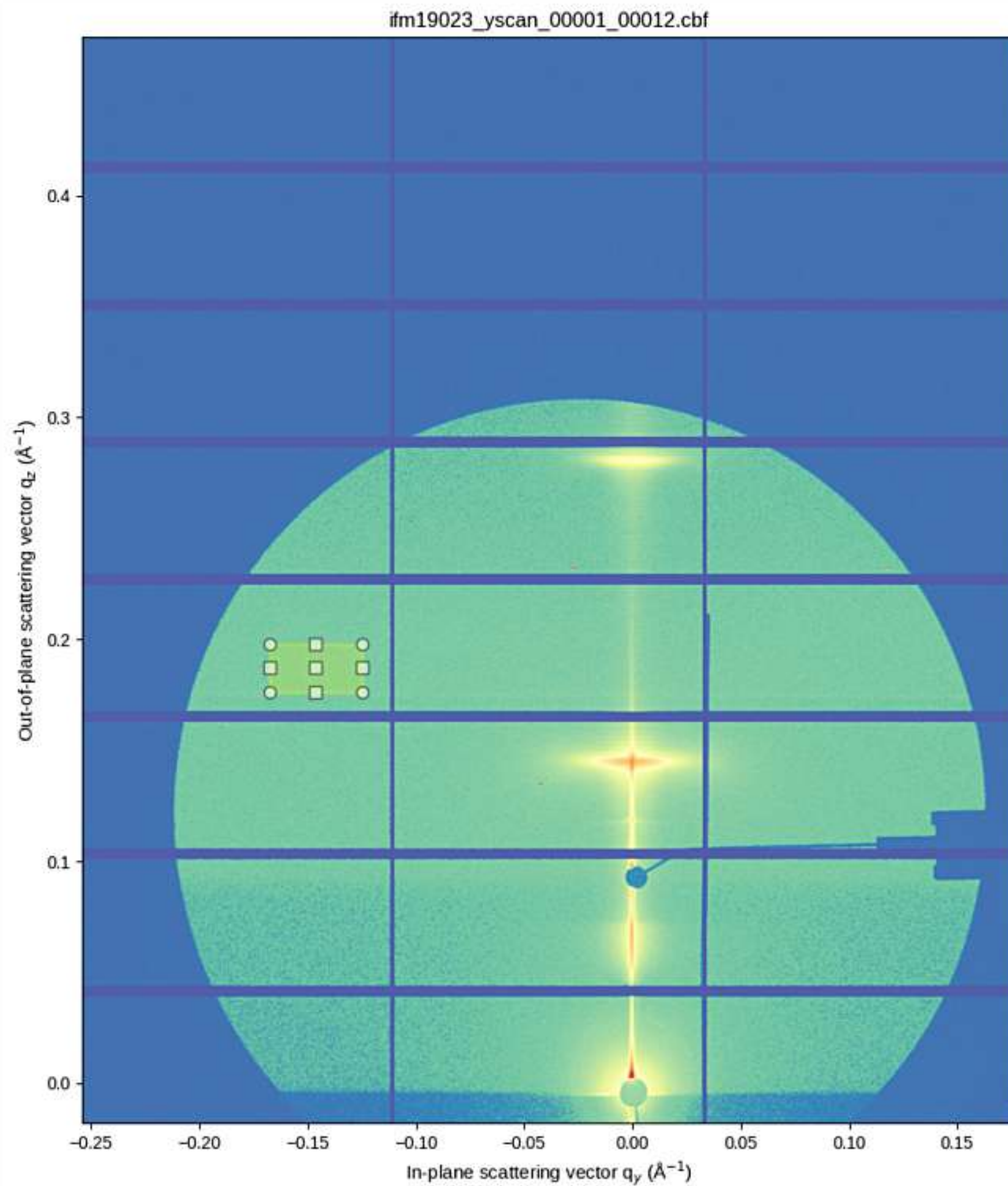
Center X:

Center Y:

-0.0003

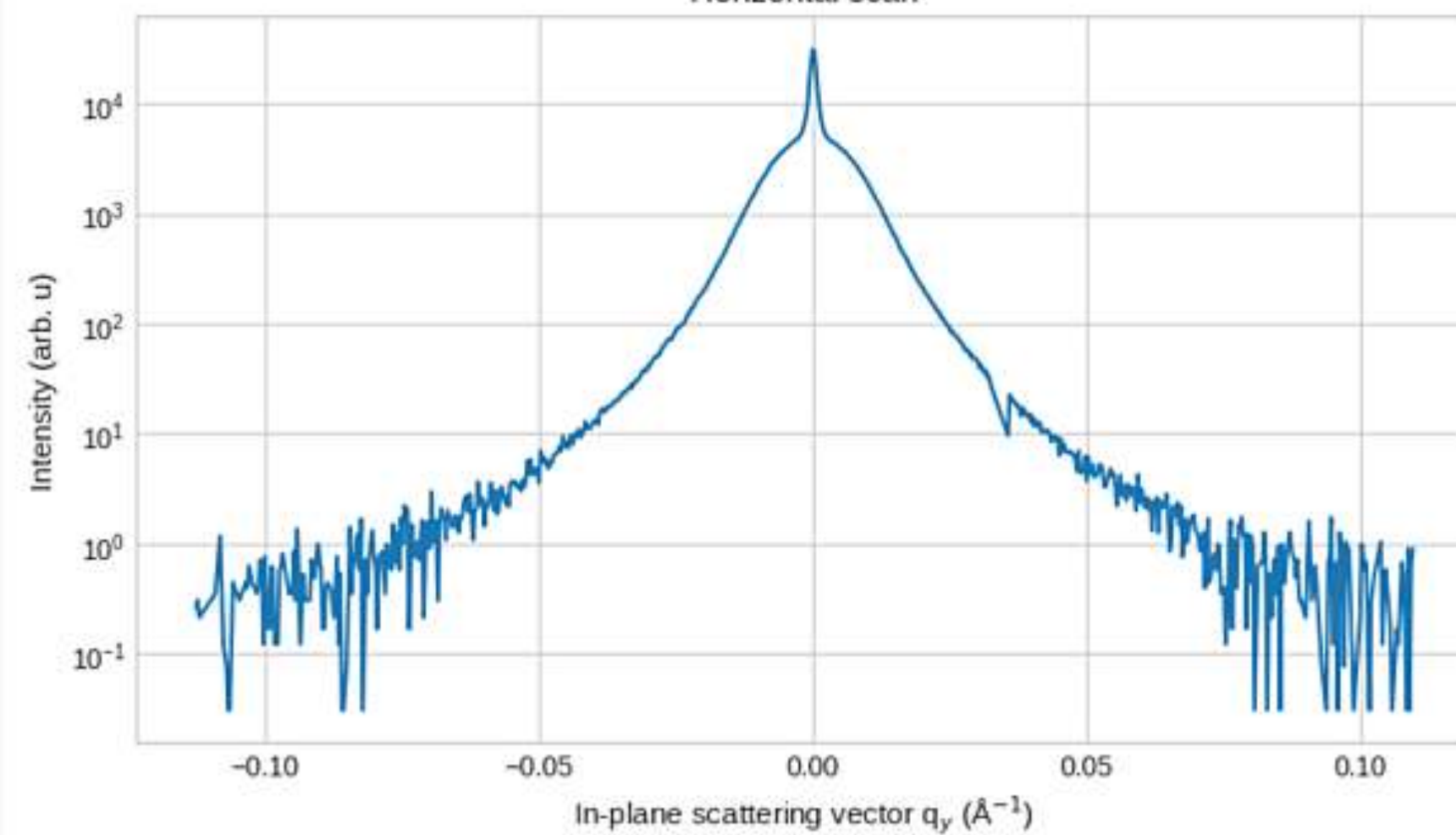
0.1526

Perform scan

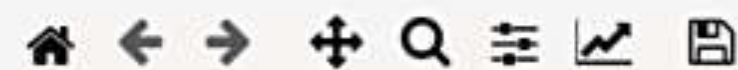
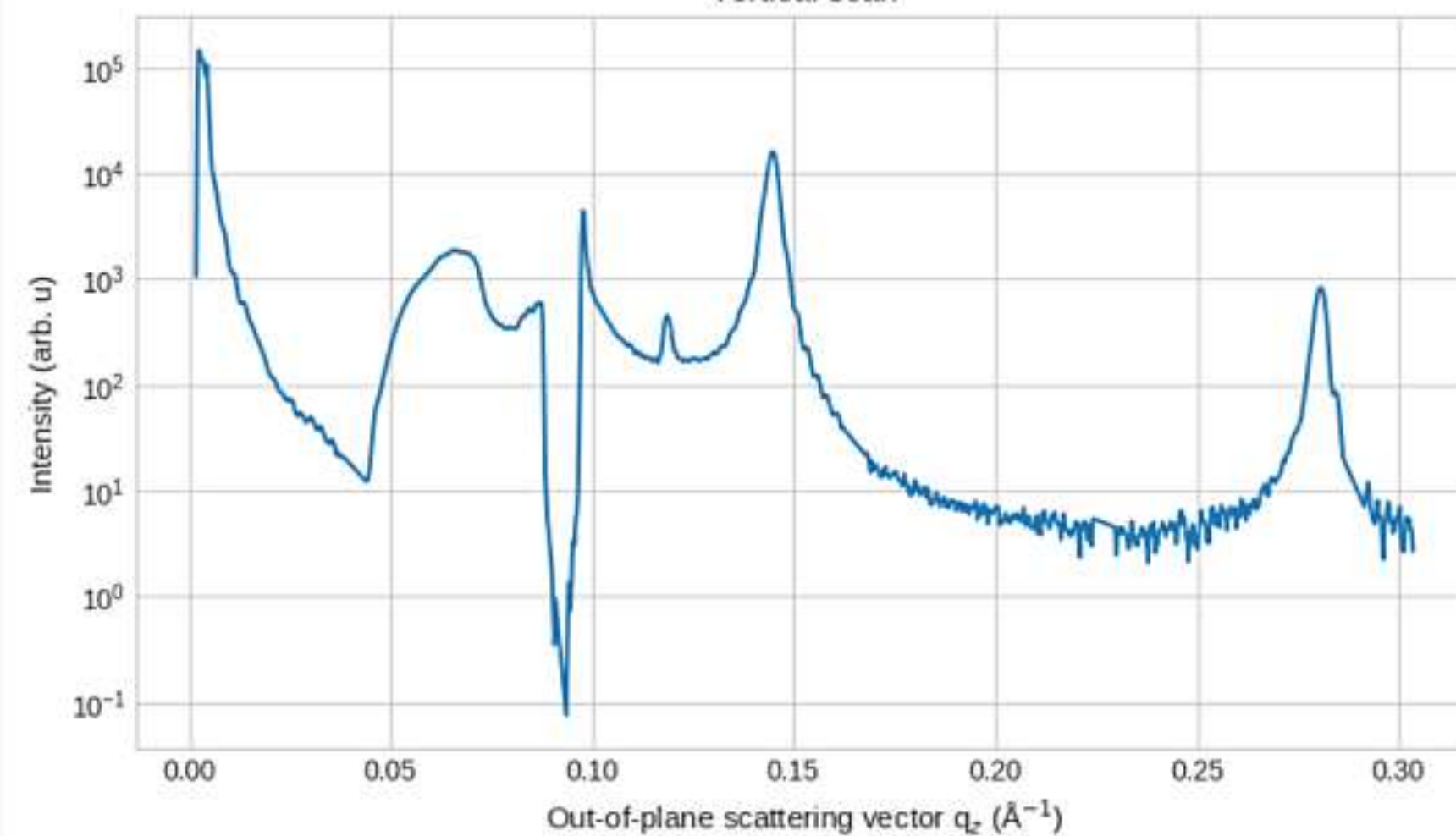


$x = -0.1487$ $y = 0.1851$
[10.0]

Horizontal scan



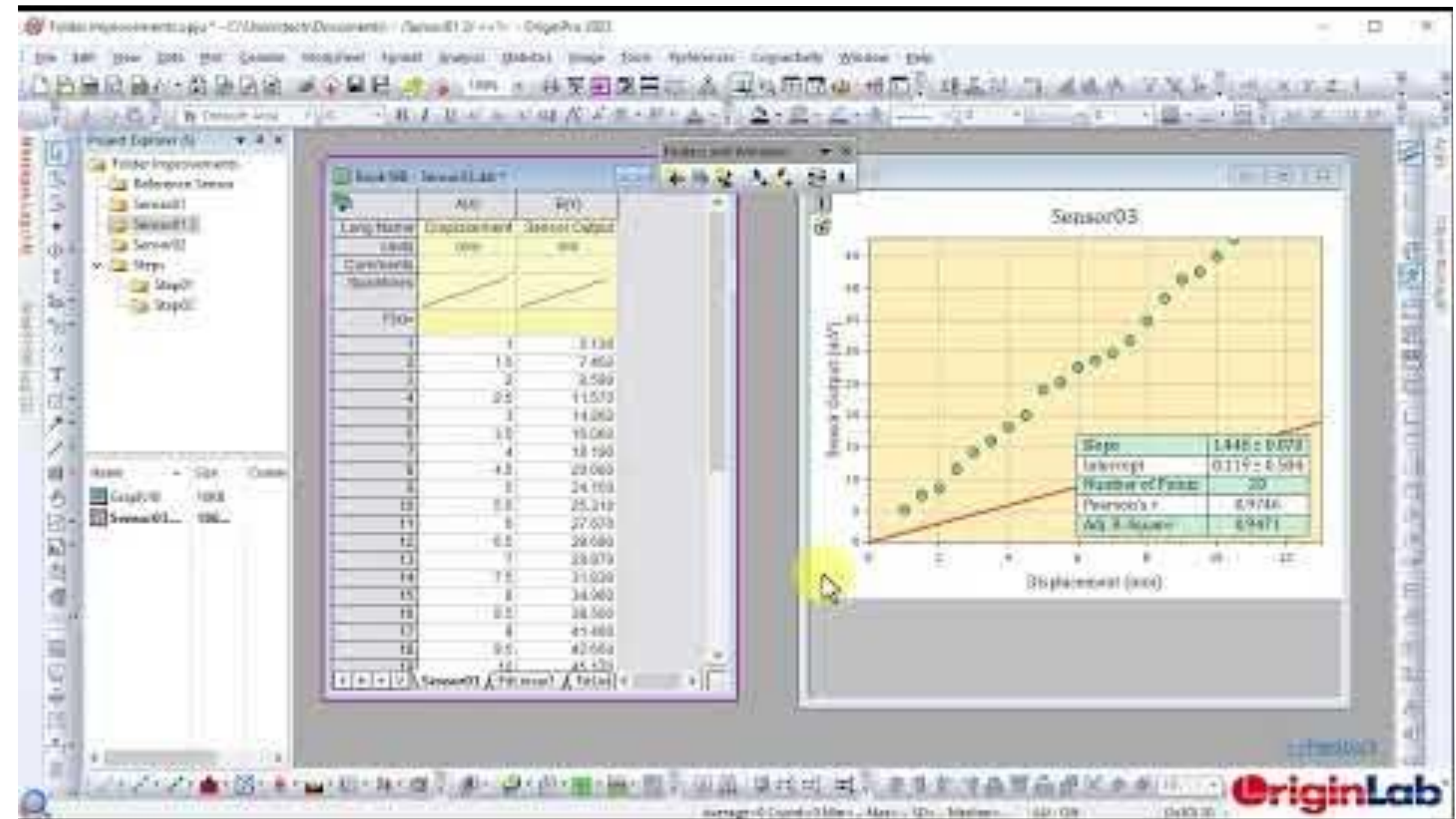
Vertical scan



Graphs

Waarom?

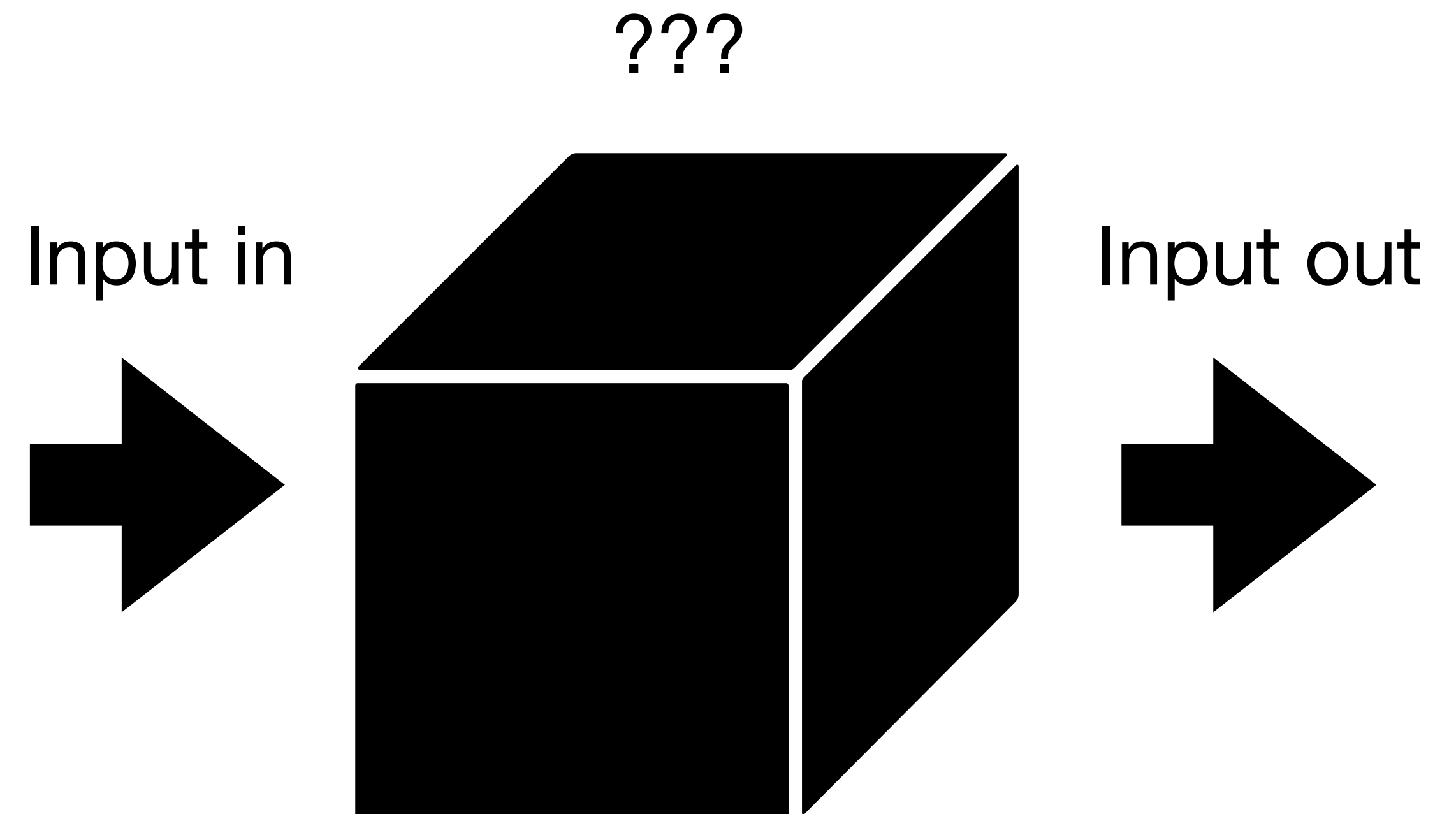
- Pragmatisch:
 - Had een programma nodig om snel en makkelijk meetdata te plotten
 - Een aantal operaties die ik steeds opnieuw moet doen, onnodig ingewikkeld in commerciële tools.
 - Geen enkel commerciële oplossing steunde X-ray metingen van Panalytical

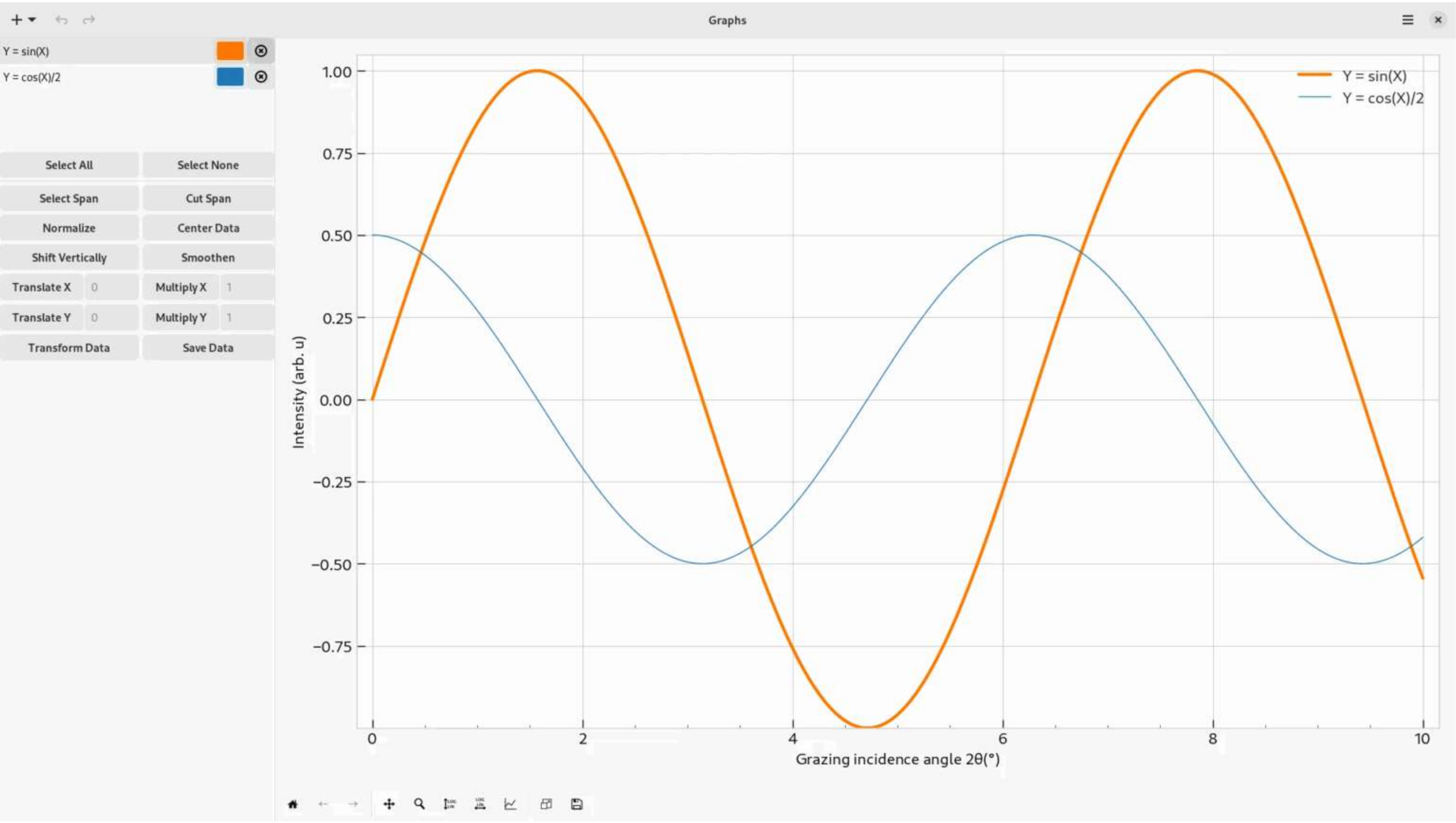


Graphs

Waarom?

- Harde eisen voor openheid in wetenschap
- “Just trust me bro” is geen basis voor goede wetenschap
 - Behalve voor software??
 - Meeste collega's zijn het eens, maar niet genoeg om daar consequenties aan te verbinden
- Commerciële tools alleen beschikbaar op Windows
- Fine, I'll do it myself





Graphs 1.0

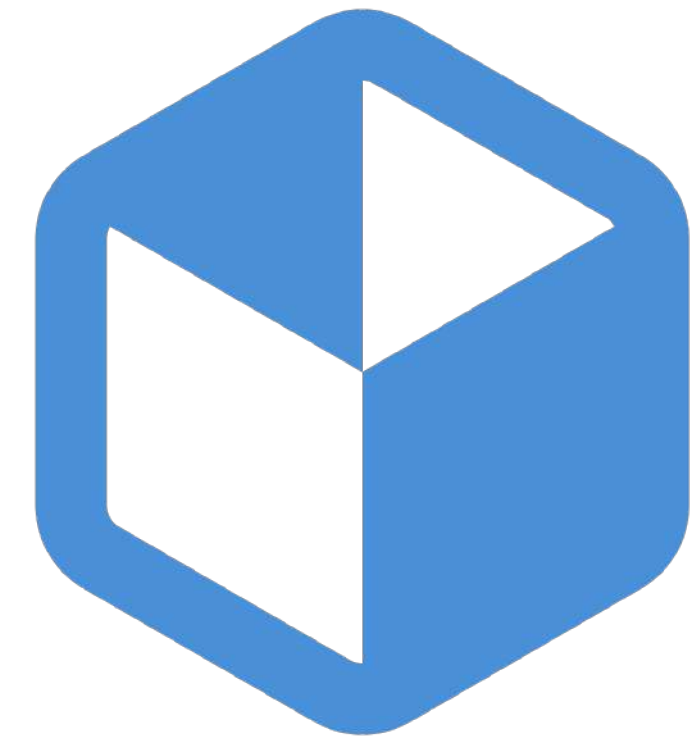
- Een interface waar alleen een ouder van kan houden
- Vrij pragmatisch voor mijn specifieke use-case



Graphs 1.0

Bouw-process

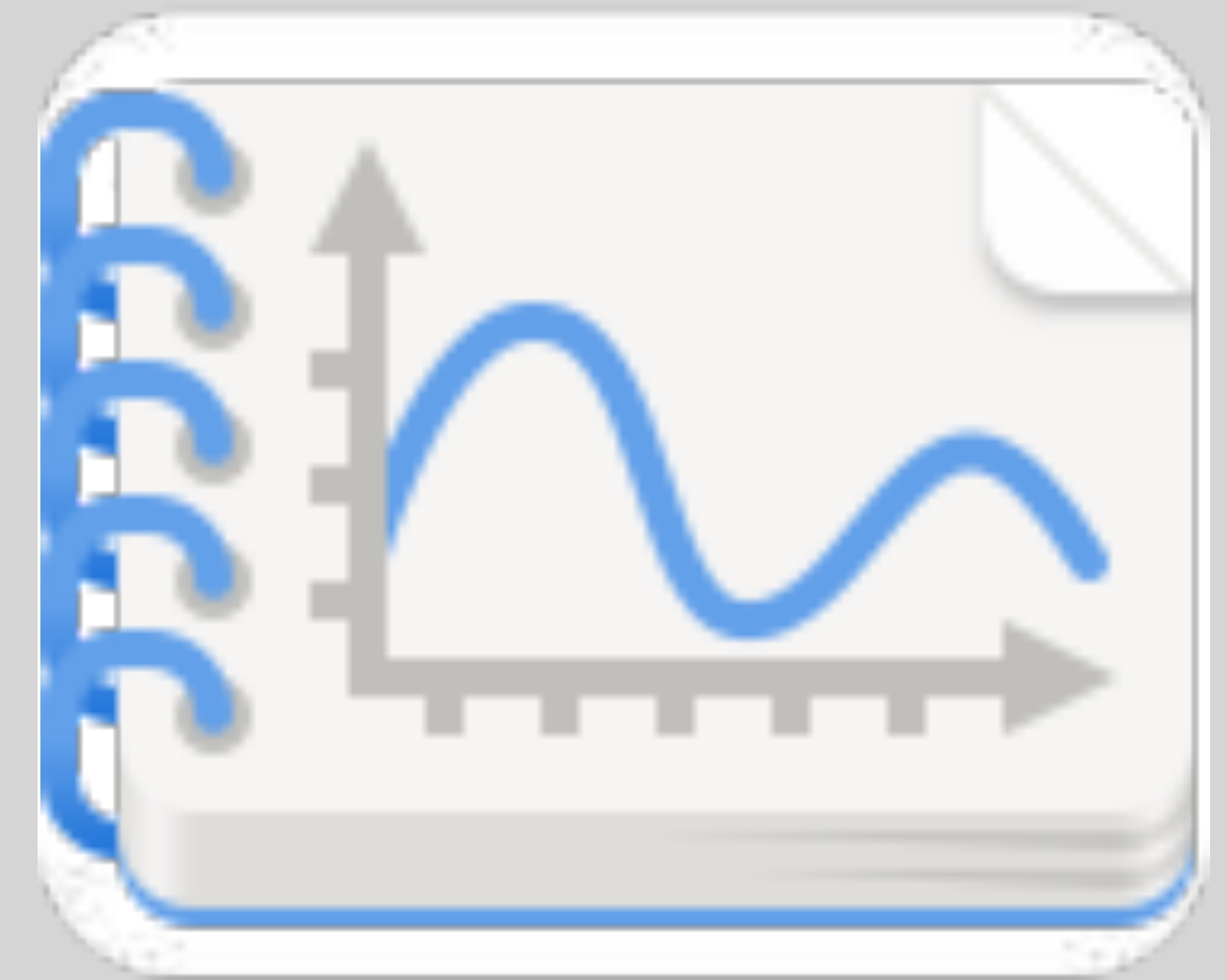
- GNOME Stack
 - libadwaita, GTK4 en Python (later Vala)
- GNOME Builder
 - Integreert goed met Flatpak, druk op de knop om te compileren
 - Templates beschikbaar
 - Alle gebruikers hebben hetzelfde milieu met dezelfde dependencies
 - UI tegenwoordig met Blueprint



Flatpak

Graphs 1.0

- Online gedeeld op de wekelijkse “This week in GNOME”
- Spontaan een deel feedback en bijdragen vanuit de GNOME community
- DatMan —> Graphs
- Nieuw logo, veel hulp van Tobias Bernard (GNOME Team) met UX
- Christoph begon met regelmatige bijdrages
 - Nu ook maintainer



[Request]: Rename DatMan

 Closed  [Issue](#) created Dec 15, 2022 by **Sjoerd Stendahl**

Created by: TheEvilSkeleton

Per the README, DatMan is developed with GNOME in mind. As such, I assume a goal of this project is to comply with the GNOME HIG right?

If so, then I propose to change the name of this app to one that complies with the GNOME HIG. The [GNOME App Naming guidelines](#) suggests to not use word combinations or made up words.

I didn't think of a name yet, but I want to know if you're open for renaming the app.

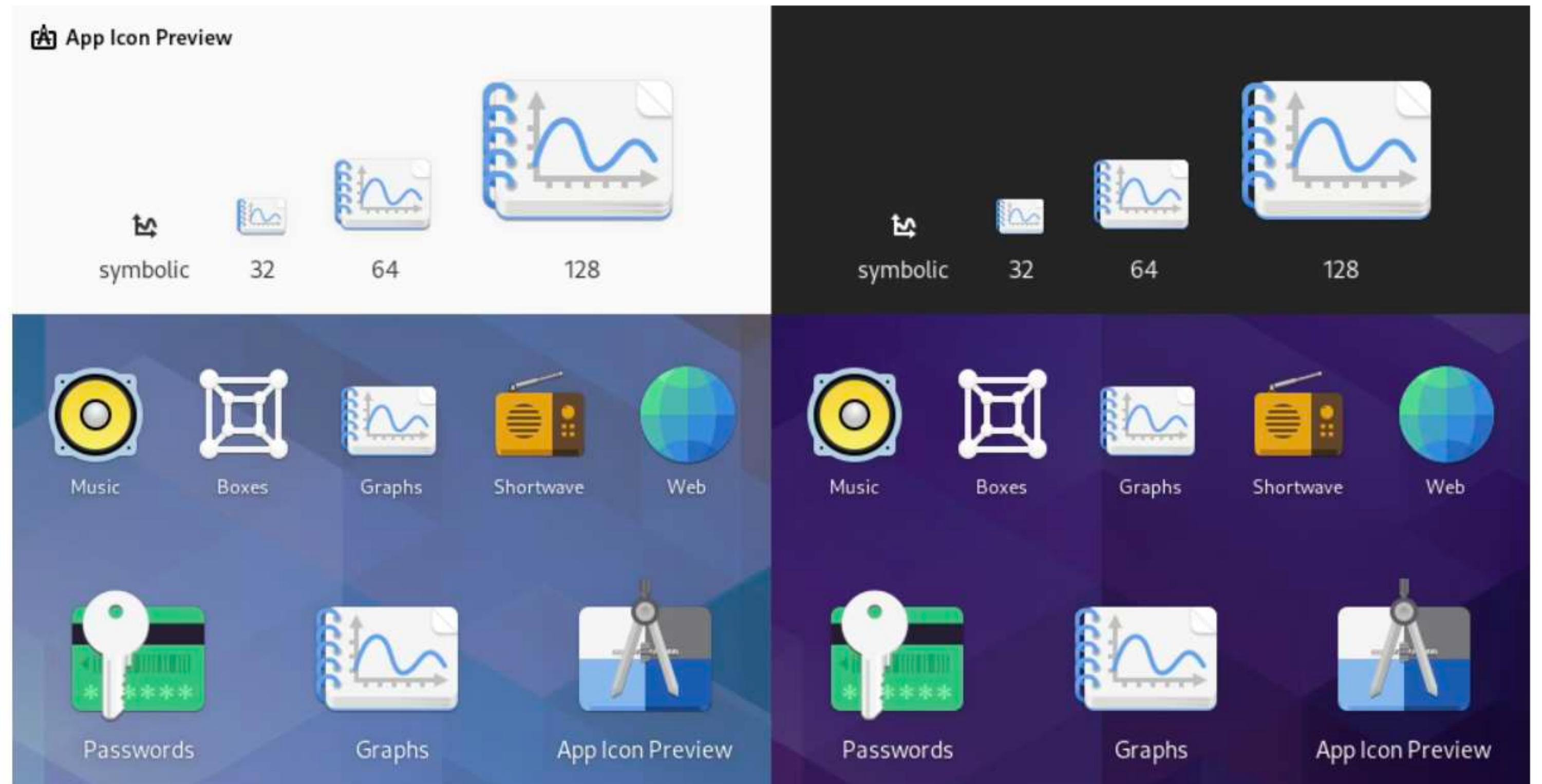
New icon?

🔒 Closed 📄 Issue created Jan 10, 2023 by **Sjoerd Stendahl**

Created by: bertob

The current icon doesn't follow the GNOME icon guidelines, would you like help with a new one?

Here's a first attempt:



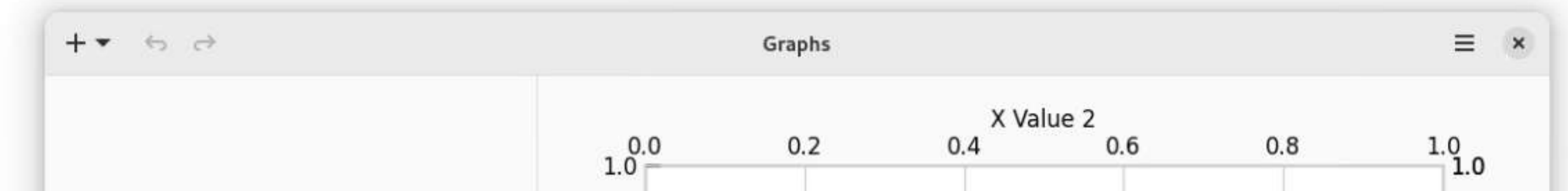
UI: Avoid grid of buttons

🔒 Closed 📄 Issue created Jan 14, 2023 by **Sjoerd Stendahl**

Created by: bertob

Currently the interface has a grid of relatively random buttons on the left, which is not a pattern that makes sense in software, since actions should always be contextual and ideally connected to the content they affect. I can't make recommendations for what to do with all of them since I don't really know the main use cases/workflows for the app, but some general guidance:

- Actions should only be visible if they actually work in the current state (e.g. most of the buttons make no sense until there's data)
- Global app actions (e.g. save data) can go in the headerbar or primary menu
- Actions specific to the left pane could maybe go in a toolbar on the bottom of the left pane
- Less important actions could go in a menu/popover
- For selection this should use the regular selection mode pattern (like e.g. in Contacts)
<https://developer.gnome.org/hig/patterns/containers/selection-mode.html>



Ul: Avoi

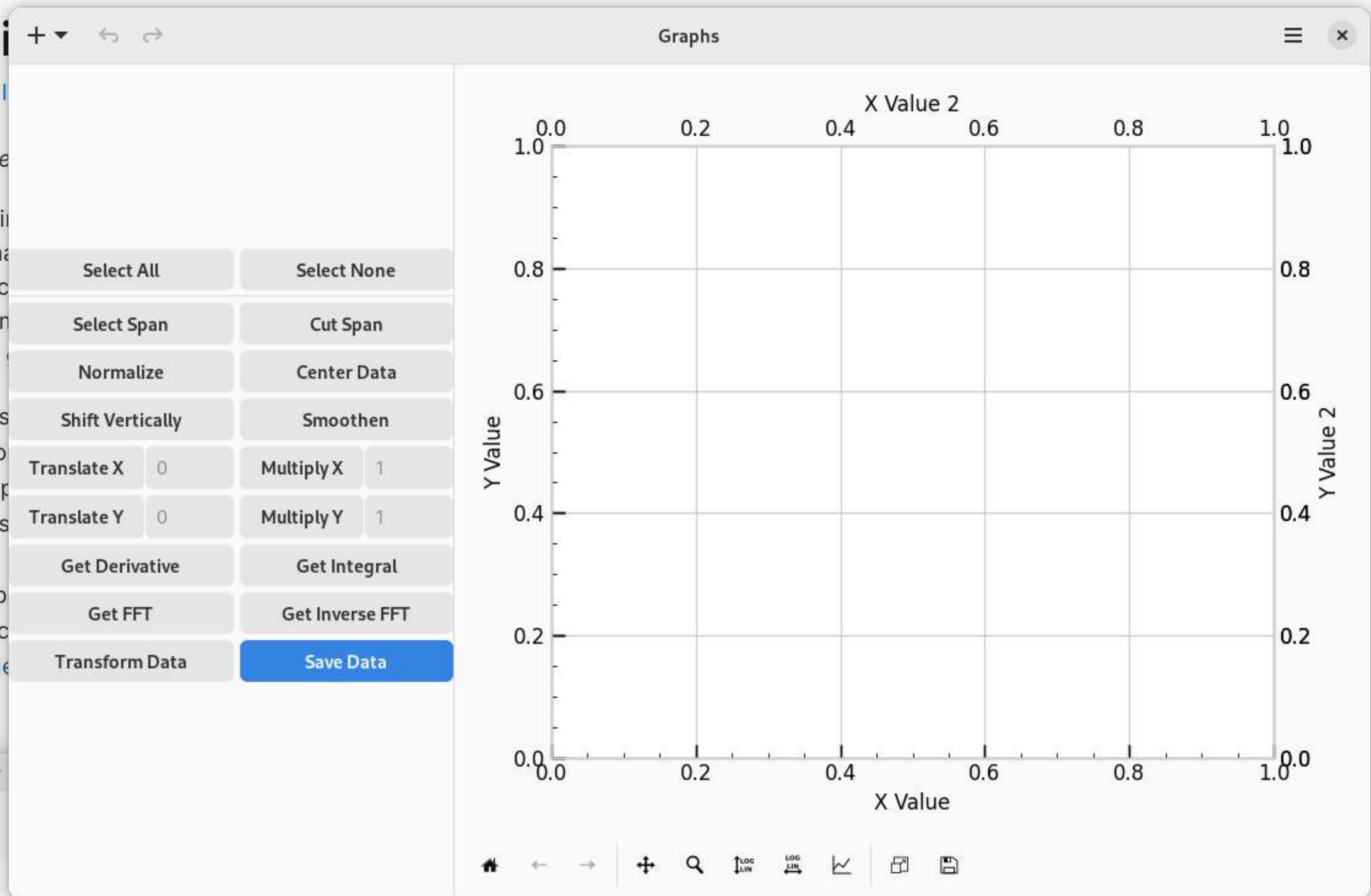
⊖ Closed

Created by: be

Currently the i
pattern that ma
ideally connec
with all of the
some general

- Actions s
the butto
- Global ap
- Actions s
pane
- Less imp
- For selec

<https://de>



Confusing "Config not found" message on first startup

 Closed  Issue created Jan 20, 2023 by Sjoerd Stendahl

Created by: jannuary

First thing the app greets you with is an error message saying something along the lines of "config not found, creating one"

This seems really weird to show when one has just installed the app – of course it wouldn't be found in that case.



Development 1

 Remove "config not found error" on startup !21

Merged



Activity

All activity ▾

Oldest first ▾



Sjoerd Stendahl @sstendahl Jan 20, 2023

Good point.

Author

Owner



Assignee

None

Labels

None

Parent

None

Milestone

None

Dates

Start: None

Due: None

Time tracking

No estimate

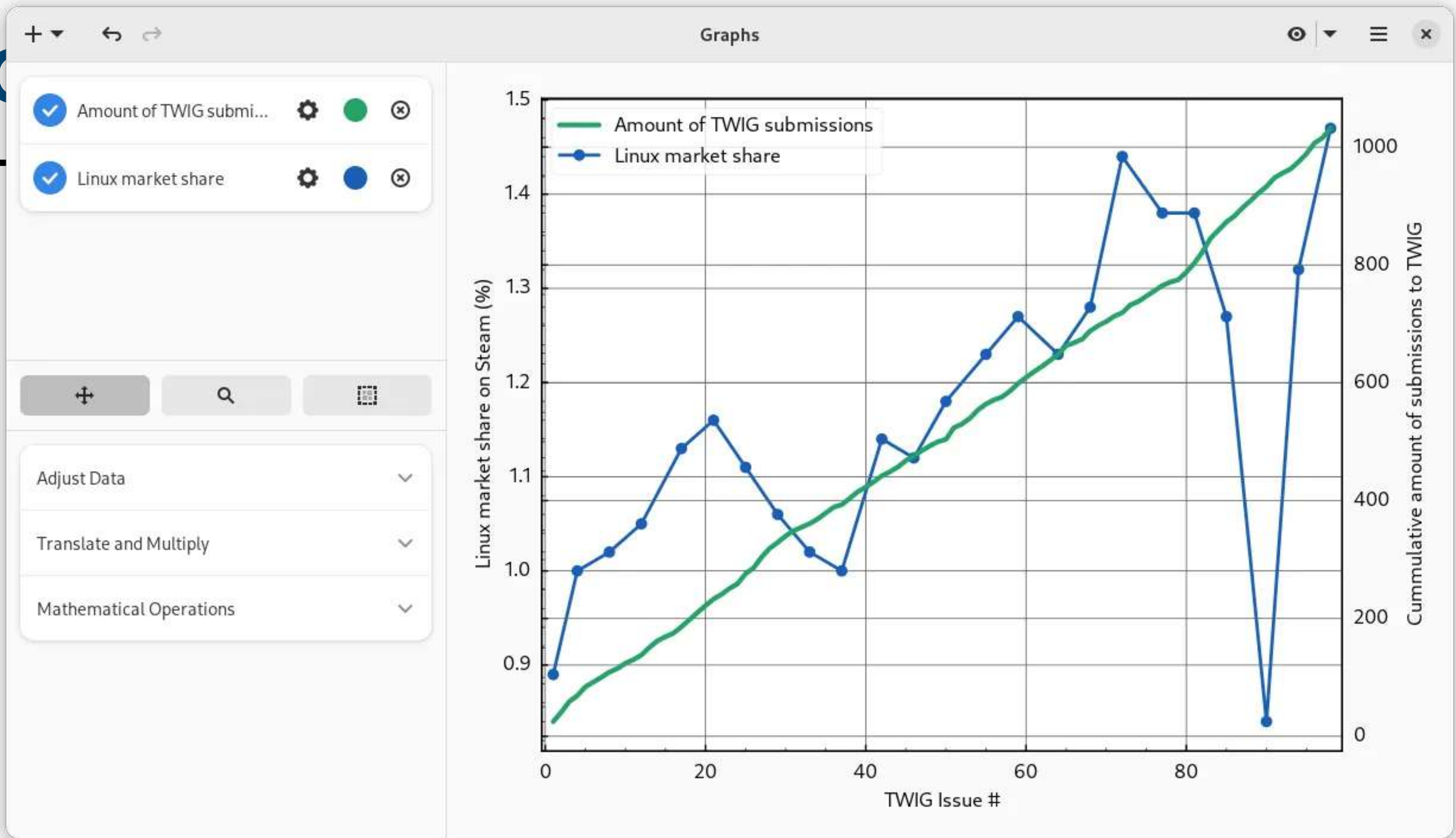
1 Participant



Graphs 1.4

Geleidelijke verbeteringen met hulp van feedback

- Meer focus op design
 - Meer focus op GNOME HIG (Human Interface Guidelines)
 - Veel papercuts eruit (verwarrende features)
- GNOME Circle aanvraag



GNOME Circle

Graphs 1.7



- GNOME Circle is een lijst met applicaties die diep integreren binnen het GNOME Ecosysteem
- “Seal of approval” van GNOME
 - Meer samenwerking met GNOME ontwikkelaars
 - Promotie vanuit GNOME (regelmatig op de voorpagina van GNOME Software)
 - Toegang tot GNOME’s infrastructuur en vertaalteam
 - Inmiddels toegankelijk in 25 verschillende talen

GNOME Circle

Graphs 1.7



- Vooral ook heel leerzaam



Tobias Bernard @tbernard@mastodon.social

🌐 Feb 2, 2025

In the same way that GNOME Circle is a developer education initiative disguised a verification program, Flathub is a metadata quality initiative disguised as an app store 😊



2





Graphs



☒ Amount of TWIG submi...   

☒ Linux market share   



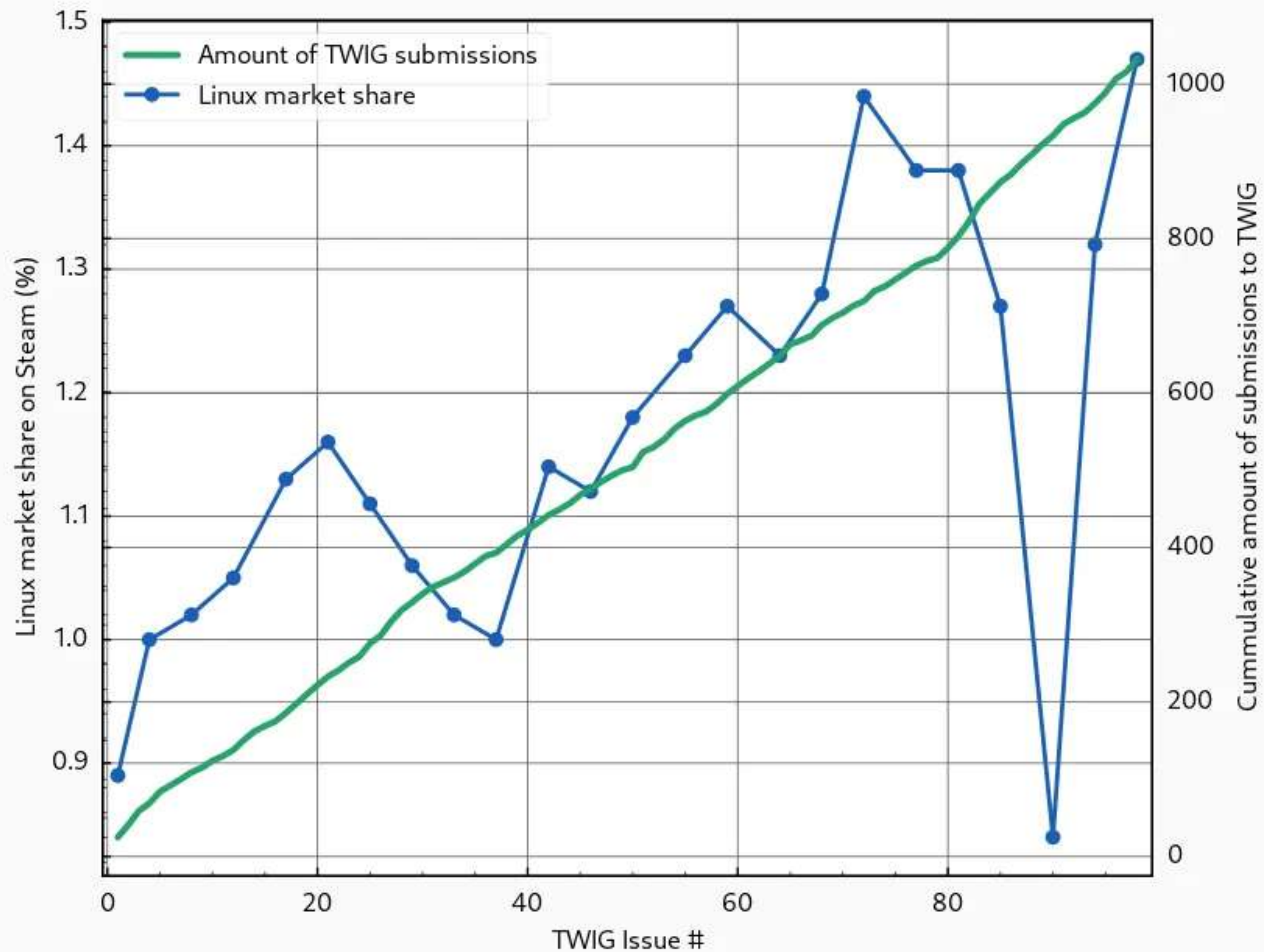
Adjust Data

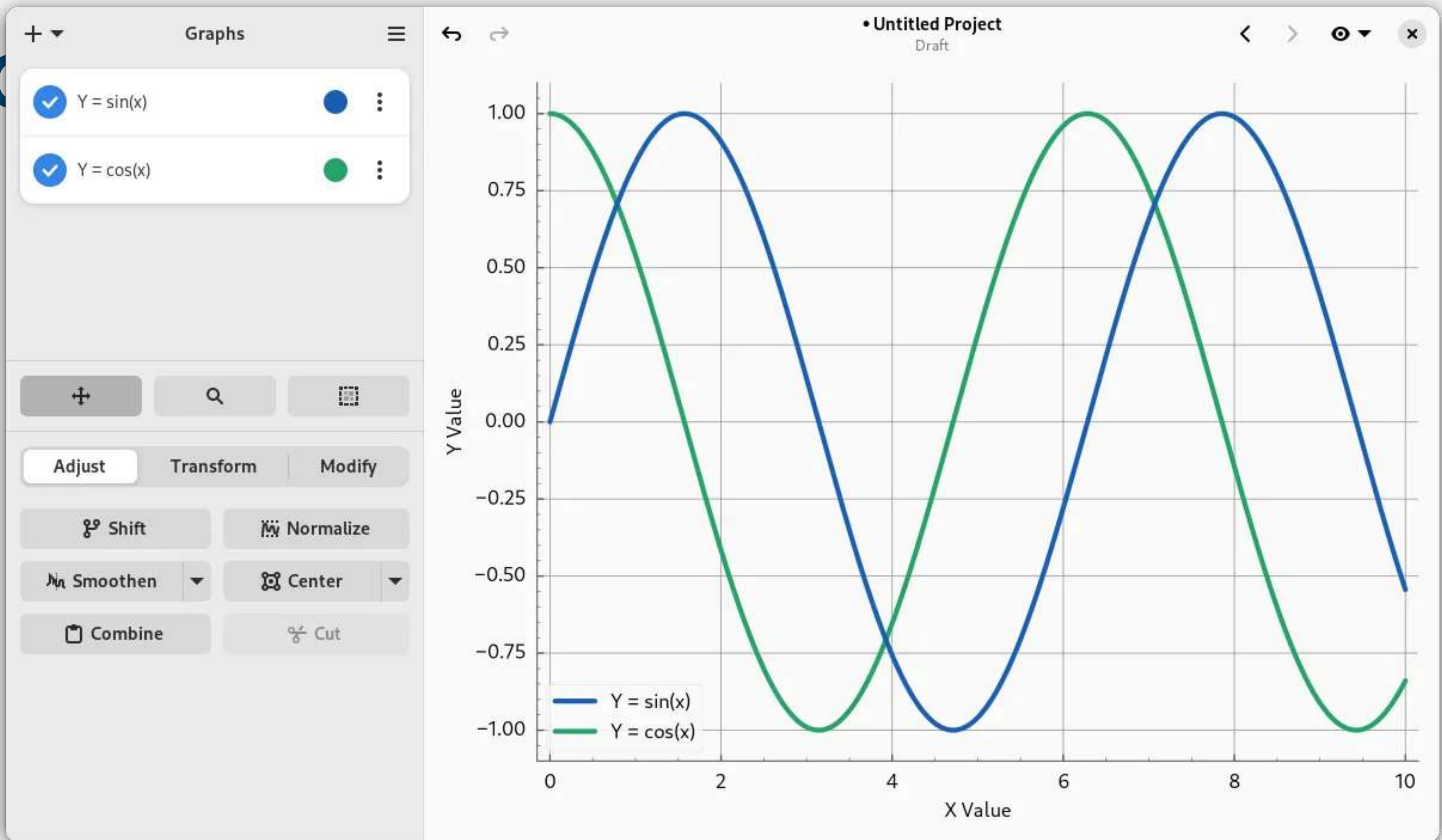


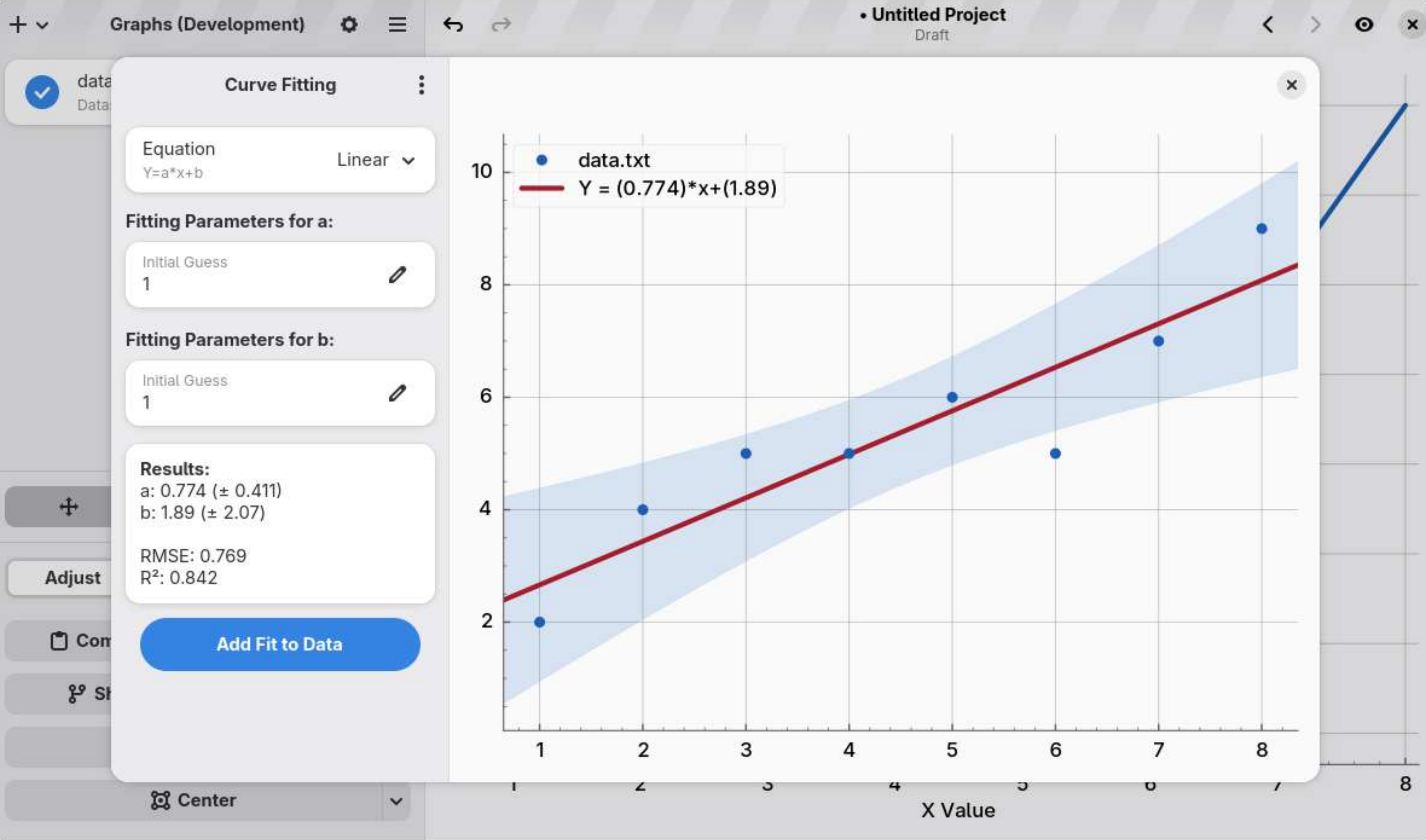
Translate and Multiply



Mathematical Operations







GNOME Circle

- Toegang duurde een aantal maanden, met grotere veranderingen
- Steun voor touchpad-gebaren en touchscreen schermen
- Steun voor mobiele telefonen
- Verdwijnen van een hoop instellingen
 - Nu herinnert Graphs de vorige status. Voor import hebben we een “Set default” knop
- Lineaire regressie, stijleditor, project-support en veel meer

GNOME Circle

- Toegang duurde een aantal maanden, met grotere veranderingen
- Steun voor touchpad-gebaren en touchscreen schermen
- Steun voor mobiele telefonen
 - Video: <https://floss.social/@sstendahl/115731449005192855>
- Verdwijnen van een hoop instellingen
 - Nu herinnert Graphs de vorige status. Voor import hebben we een “Set default” knop
- Lineaire regressie, stijleditor, project-support en veel meer

GNOME Circle

Help met promotie

- Ook te zien in het aantal downloads
 - Ruim over de 1000 “actieve gebruikers” op Snap (Ubuntu), en over 47000 downloads op Flathub (primaire platform)
 - Ook gepackaged (blijkbaar) voor o.a. Arch en NixOS
 - Duidelijk meer Merge Requests en issues die gerapporteerd worden

se.sjoerd.Graphs



∞



per day

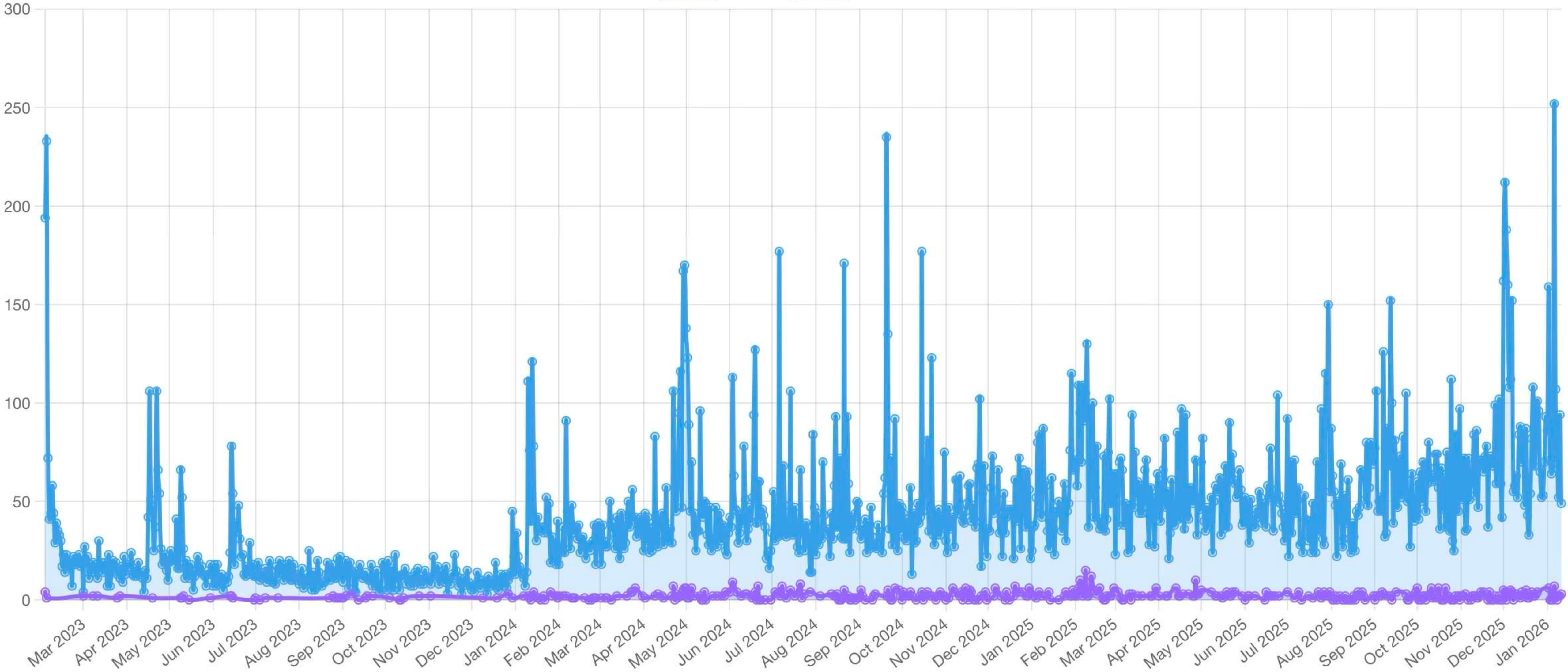


installs*



Total: 45955 downloads | Average: 42.67 downloads per day

aarch64 x86_64



se.sjoerd.Graphs



∞



per day

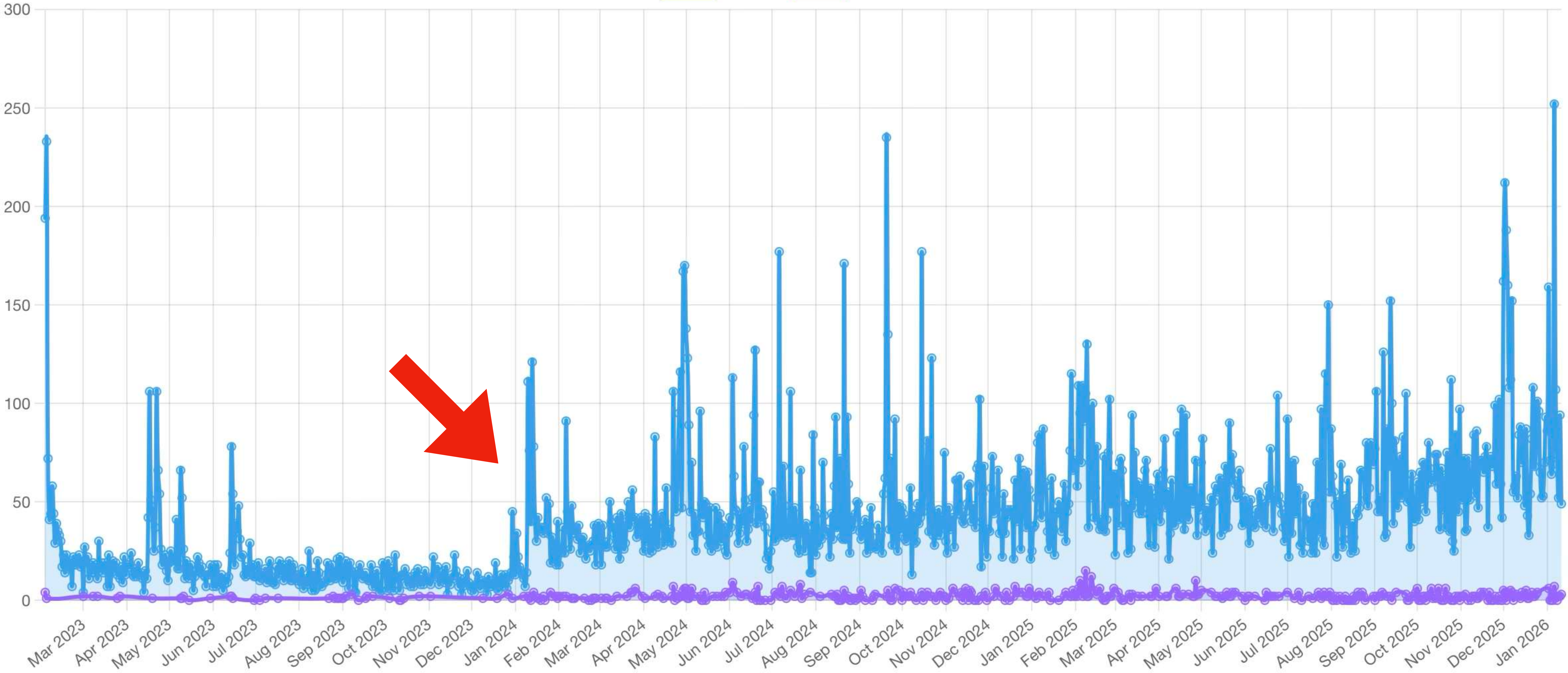


installs*



Total: 45955 downloads | Average: 42.67 downloads per day

aarch64 x86_64



De toekomst van Graphs

Graphs 2.0

- Steun voor “echte” vergelijkingen met een oneindige canvas
- Steun voor sqlite databases en excel-sheets
- Meerdere sessies tegelijkertijd
- Grote verbeteringen voor de statistiek in de curve fitting tool
- Nieuwe stijl-editor met live preview
- Verbeteringen in UI en UX
- Vernieuwde import
- En veel meer... soon TM

Do Gra

- S
- S
- M
- G
- N
- V
- E

Graphs Style Editor



Style Name
Adwaita (1)



Font

Adwaita Sans Regular 12

Title Size

Title size in relation to text size

140%

Label Size

Label size in relation to text size

100%

Lines

Linestyle

Solid ▾

Linewidth

3.2

Markers

None ▾

Marker Size

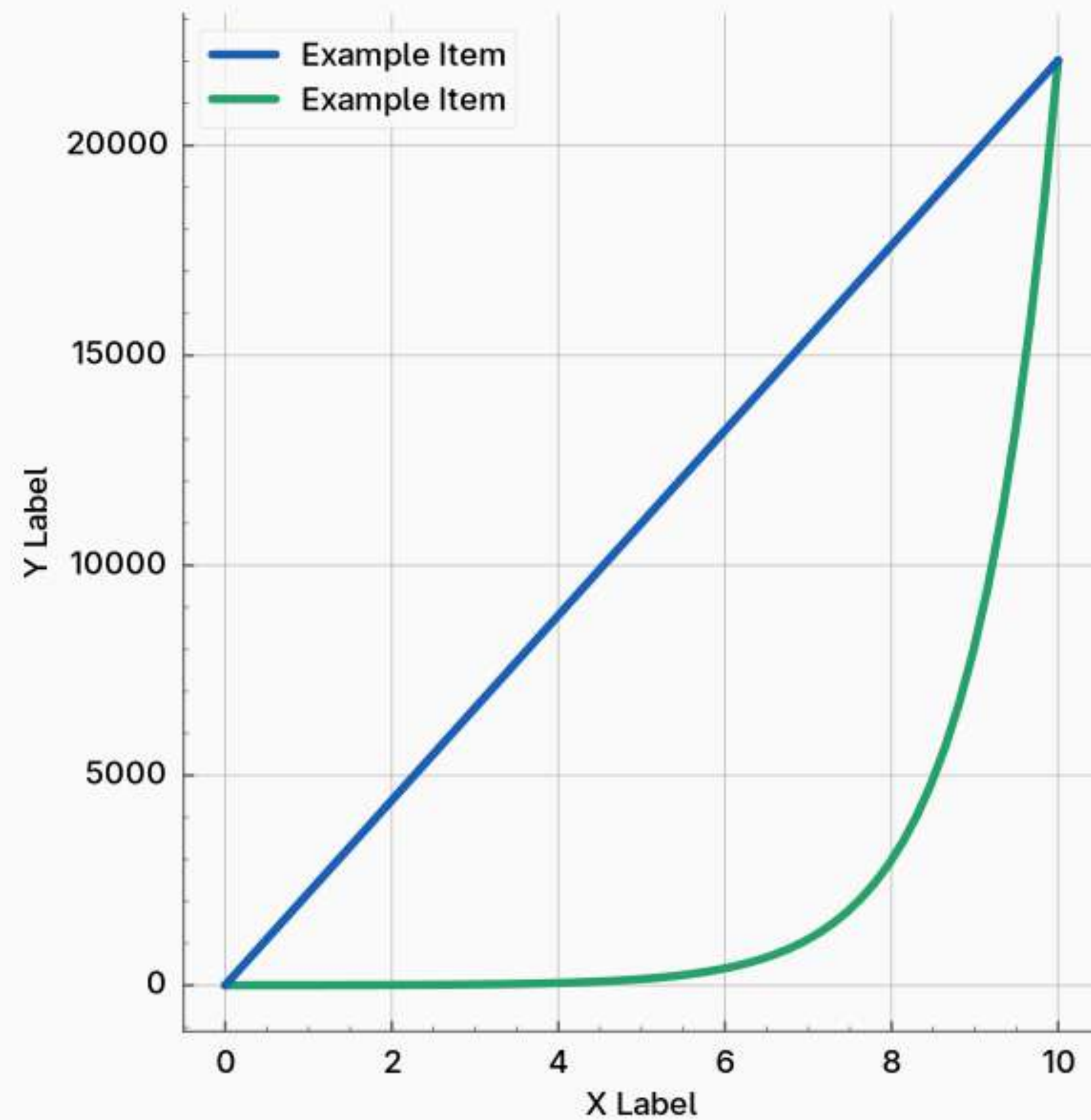
7.0

Axes

Axis Width

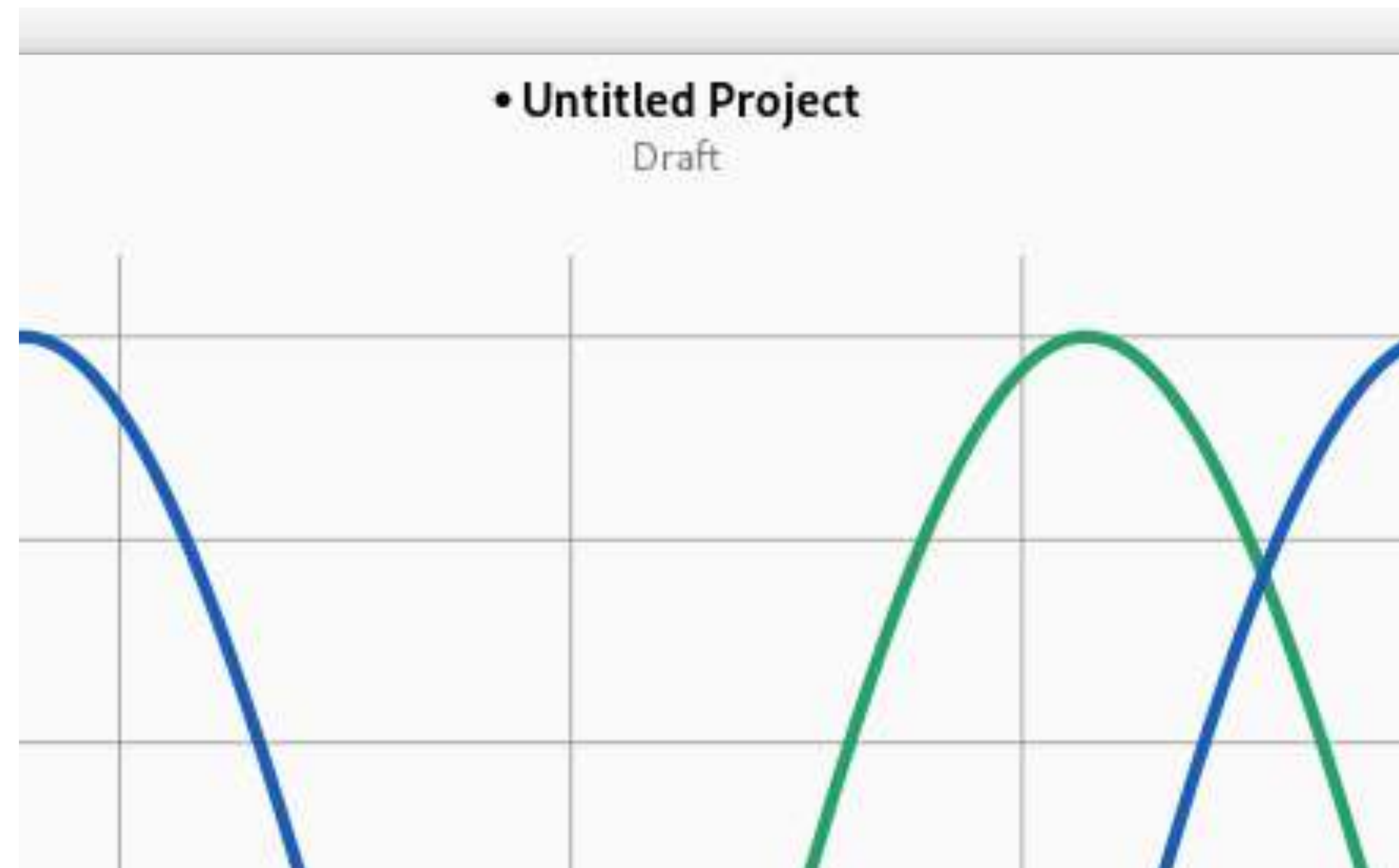
0.8

Title



Community-support

- Flatpak heeft geen toegang tot het bestandspad van bestanden
 - In plaats van het pad “Document Portal”
 - GNOME Text Editor had dit opgelost
 - Hun broncode is beschikbaar



```

35
36 #define FILE_ATTRIBUTE_HOST_PATH "xattr::document-portal.host-path"
37
    if ((info = g_file_query_info (file,
                                FILE_ATTRIBUTE_HOST_PATH,
                                G_FILE_QUERY_INFO_NONE,
                                NULL, NULL)))
    {
        const char *host_path;

        if ((host_path = g_file_info_get_attribute_string (info, FILE_ATTRIBUTE_HOST_PATH)))
        {
            g_autofree gchar *fs_path = NULL;
            g_autofree gchar *disp_path = NULL;
            gsize len = strlen (host_path);

            /* Early portal versions added a "\x00" suffix, trim it if present */
            if (len > 4 && g_strcmp0 (&host_path[len-4], "\\x00") == 0)
                fs_path = g_strndup (host_path, len - 4);
            else
                fs_path = g_strdup (host_path);

            disp_path = g_filename_display_name (fs_path);
            return _editor_path_collapse (disp_path);
        }
    }

    return g_strdup (_("Document Portal"));
}

```

```

35
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        return _editor_path_collapse (disp_path);
    }
}

return g_strdup (_("Document Portal"));
}

```

```
// Check if this is a document portal path and query the real host path from the file itself
int uid = (int) Posix.getuid ();
string doc_portal = @"/run/user/$uid/doc/";
if (filepath.has_prefix (doc_portal)) {
    var info = file.query_info ("xattr::document-portal.host-path", FileQueryInfoFlags.NONE);
    string? host_path = info.get_attribute_string ("xattr::document-portal.host-path");

    if (host_path != null) {
        // Early portal versions added a "\\x00" suffix, trim it if present
        int len = host_path.length;
        if (len > 4 && host_path.has_suffix ("\\x00")) {
            host_path = host_path.substring (0, len - 4);
        }
        filepath = Path.get_dirname (host_path);
    } else {
        // Use "Document Portal" as fallback
        return _("Document Portal");
    }
}
```

```
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}
```

Community-support

- Gedeeld op Mastadon
- Twitter for nerds



Sjoerd Stendahl

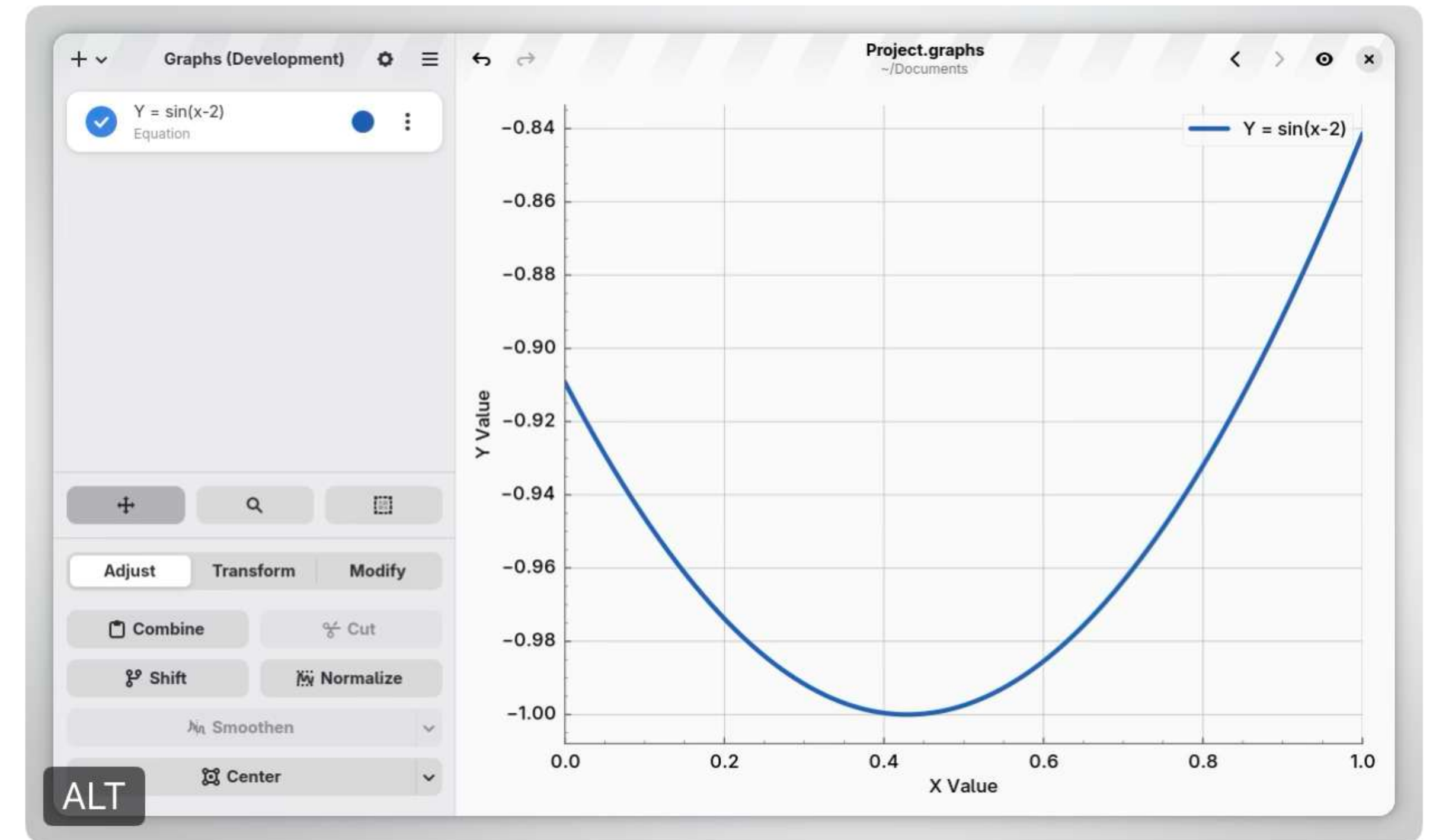
4 d · @sstendahl

Sometimes having the source code available of other projects is very useful.

I noticed that GNOME Text Editor nowadays correctly displays the file path in the subtitle, even in Flatpak with limited permissions. This was not always possible to the best of my knowledge.

So instead of asking somebody for support, I can simply look at their source code how they handle it, and lo and behold. Now I've got a fix for this in Graphs as well :)

[#GNOME](#) [#GNOMECircle](#) [#FOSS](#)



← 3

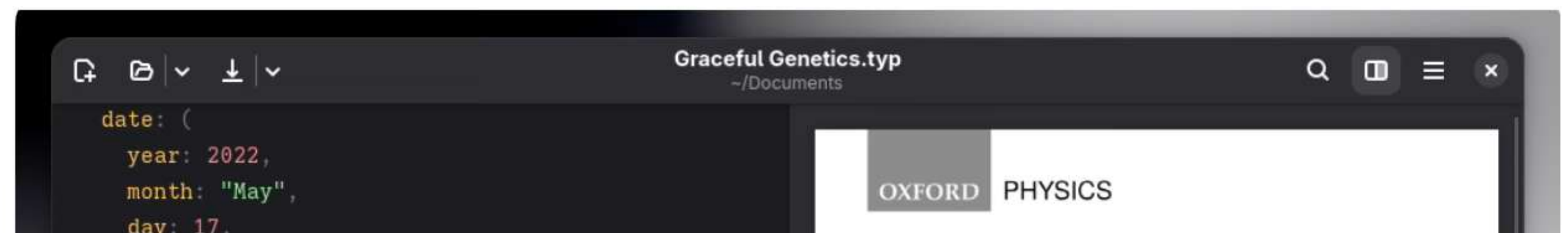
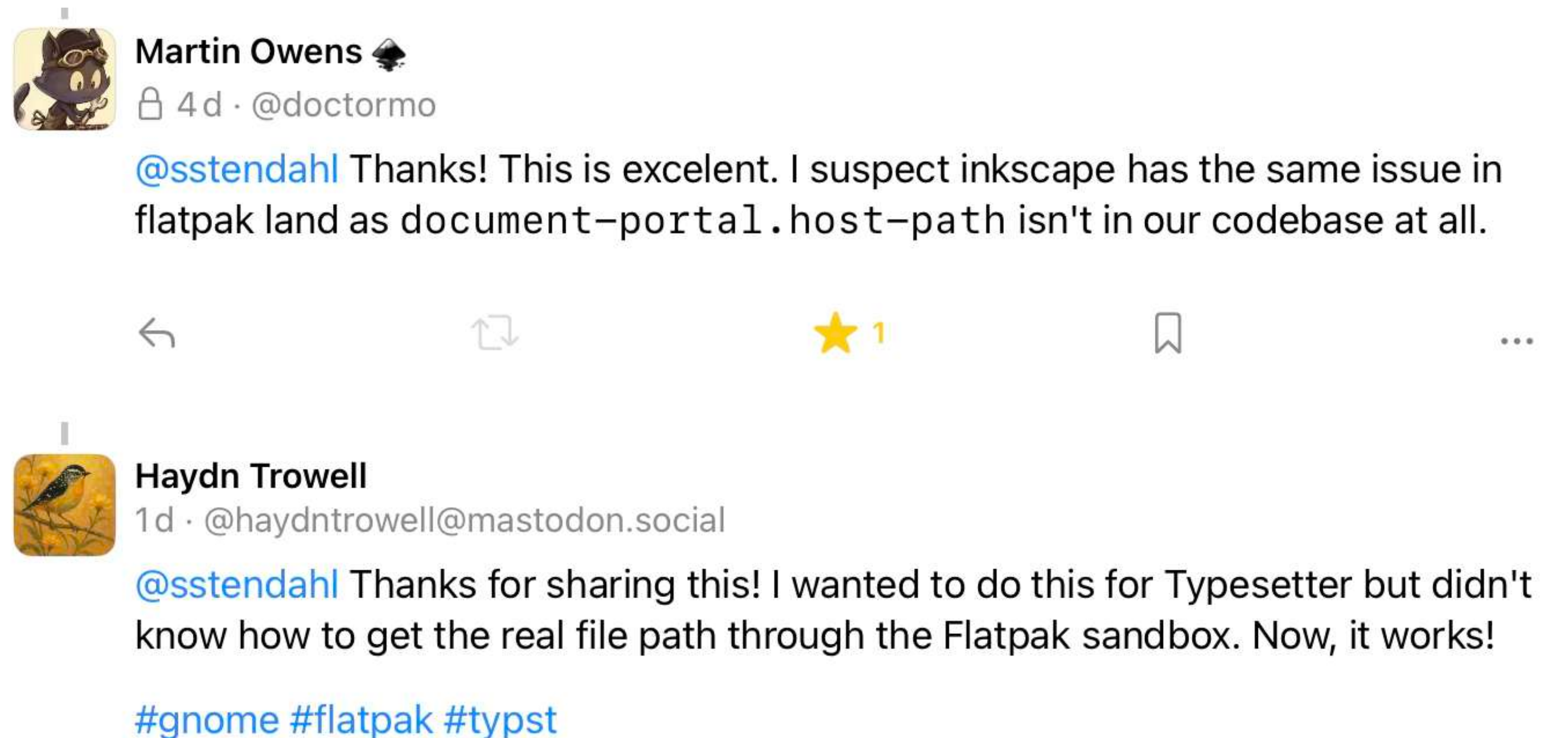
↻ 6

★ 44



Community-support

- Gedeeld op Mastadon
- Twitter for nerds
- Inkscape en Typesetter hadden hetzelfde probleem
- Open-source werkt!



Conclusies

- Het ontwikkelen en publiceren van je eigen applicaties is eigenlijk vrij eenvoudig
- Community is belangrijk, ook vooral leuk!
- Durf te delen!
- contact@sjoerd.se
- Mastodon: sstendahl@floss.social (geen email)

