flair v1 → v2

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flair 1.2-4

Flair (most important) functionality that added since the last report (Oct 12):

- Dicom: (thanks to Andrea, Nicolini, ...)
  - CT file conversion to enhanced FLUKA voxel format
  - PET-CT importing custom source.f
- Material importing to library
- PET geometry generator (thanks to Pablo Ortega)
- Enhcanced MCNP importing (lattices, transformations)
- Importing of GDML geometries
- Copy&Paste through standard clipboard
- Spawn jobs / Processed files use new file syntax
- Spawn jobs can run in subdirectories
- Filtering listboxes

...

From version 1.2-0 no more functionality was added apart bug fixes

flair-geoviewer 1.2-4

Geometry viewer:

- Parallelization of the code / Code refactoring (thanks to D. Sinuela)
- Projection/Layers/Errors dialogs are docked
- Layers (global/local) saved in .ini or .flair
- Paste/Cloning of regions clones bodies
- Automatic generation of repetitive bodies
- optimized CSG expansion using body-body intersection location and arbitrary oriented bounding boxes
- edge detection in 3D
- support of multiple palettes
- region names
- show dimensions on screen of edited body

  ...

- Easily portable: able to compile/run on Mac and Android tablets

7 years of flair

2007 First public version released

Since then flair has been constantly enhanced with functionality

2010 geometry-viewer and debugger module

2011 v1 released with geometry-editor

Currently:

- 170'000 lines of code (flair + geoviewer + libraries)
- ~2000 unique IP downloads on every release

The interface has reached its limits

The code needed serious cleaning

V1 Problems [1/2]

- Multiple places to access information, e.g. toolbar, tree, menu
- Common menu for all frames. Necessary to disable/enable functions
- Toolbar with small icons
  - not obvious meaning (just from the image)
  - hard to click on new high resolution screens
  - equal weight on important and less important functions
- some functionality was split in multiple frames (Run/Files/Data)
- Tree not offering a multiple selection → No multiple editing of plots etc.

V1 Problems [2/2]

- Many features there but not discoverable e.g. Geometry Editor, Automatic scanning of detectors, advanced filtering, region optimization,...
  Features hidden in the menu that nobody looks (out of site by default!)
- Too much information was appearing on the main page, tree with all applications, toolbar with all applications etc...
- Some frames too complex with a lot of information for a novice or even the advanced user do not always need!
  e.g. Plots like Geometry
- Window layout management non-existent. Two frames where hard to manage.
- Geometry editor was external app and hard to synchronize.
- xterm was confusing for the beginners + mixing output

V1 Statistics

Percentage	Frame
20.2%	Input
18.5%	Run
17.4%	Geometry Editor
12.5%	Flair Project
9.7%	Calculator
3.5%	Data
2.3%	Plot
1.6%	Compile
1.5%	USR-1D
0.9%	USRBIN Plot
0.9%	Files
0.8%	Viewer
0.7%	FLUKA Debugger
9.7%	Other

V1 Statistics [2/2]

Python version

Percentage	Version	Distribution
7%	2.3	SLC4, RH4, Centos4
40%	2.4	SLC5, RH5, Centos5
7%	2.5	
17%	2.6	SLC6, RH6, Centos6
28%	2.7	FC17+, Ubuntu12+

V2 Interface redesign (or so) [1/2]

- Kernel not touched!
- Common interface for all frames/pages
- Dockable windows + Possibility to open as external window
- Fully User customizable
- Nicer graphics
- Provide only basic tabs as default choice
- Menu/toolbar replaced by extended toolbar/ribbon with descriptions. (Penalty vertical space)
  - easiness of pointing a button is proportional to it's surface / distance
  - minimise mouse movements
  - bigger buttons for more important functions

Thanks to
Thanasis Manousos,

V2 Interface redesign (or so) [2/2]

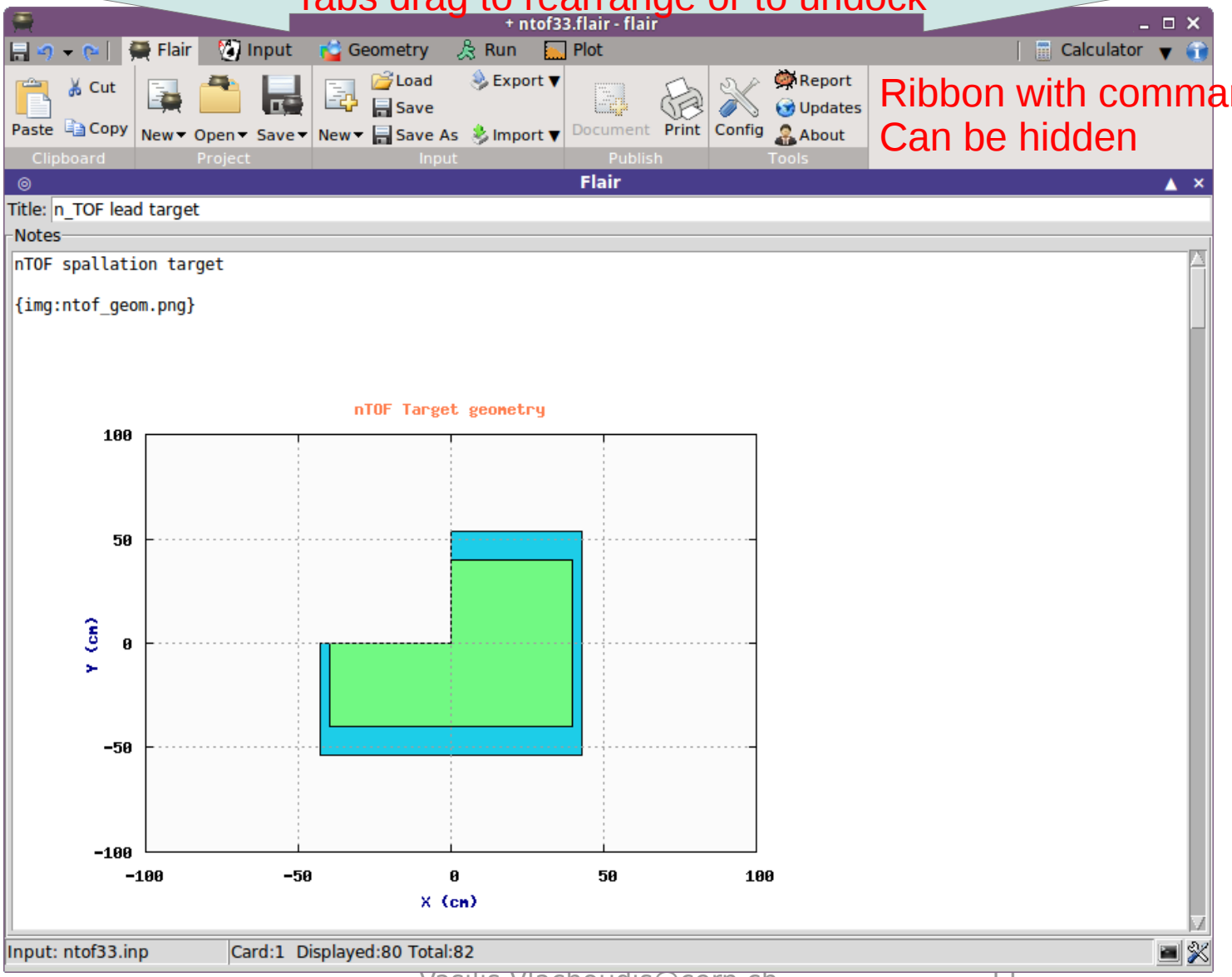
- each page show only most frequent used fields. Rest are hidden as advanced options
- more intelligent functionality on each page
- split functionality from interface
- all process run in background

  Plots:

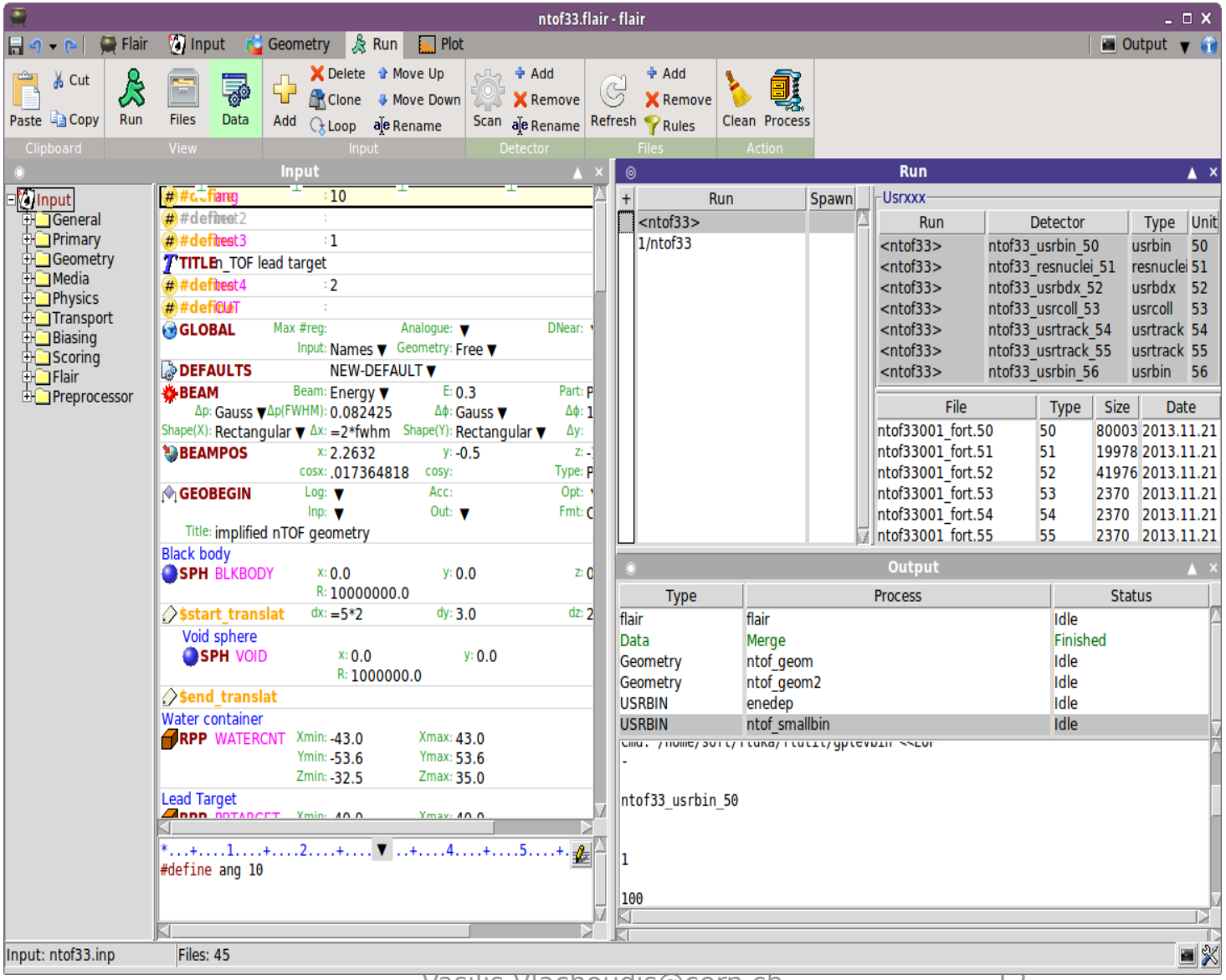
  - multiple editing of plots
  - plot abstraction layer to support other engines: matplotlib, root
  - embed images to notes

flair2 – main page

Tabs drag to rearrange or to undock

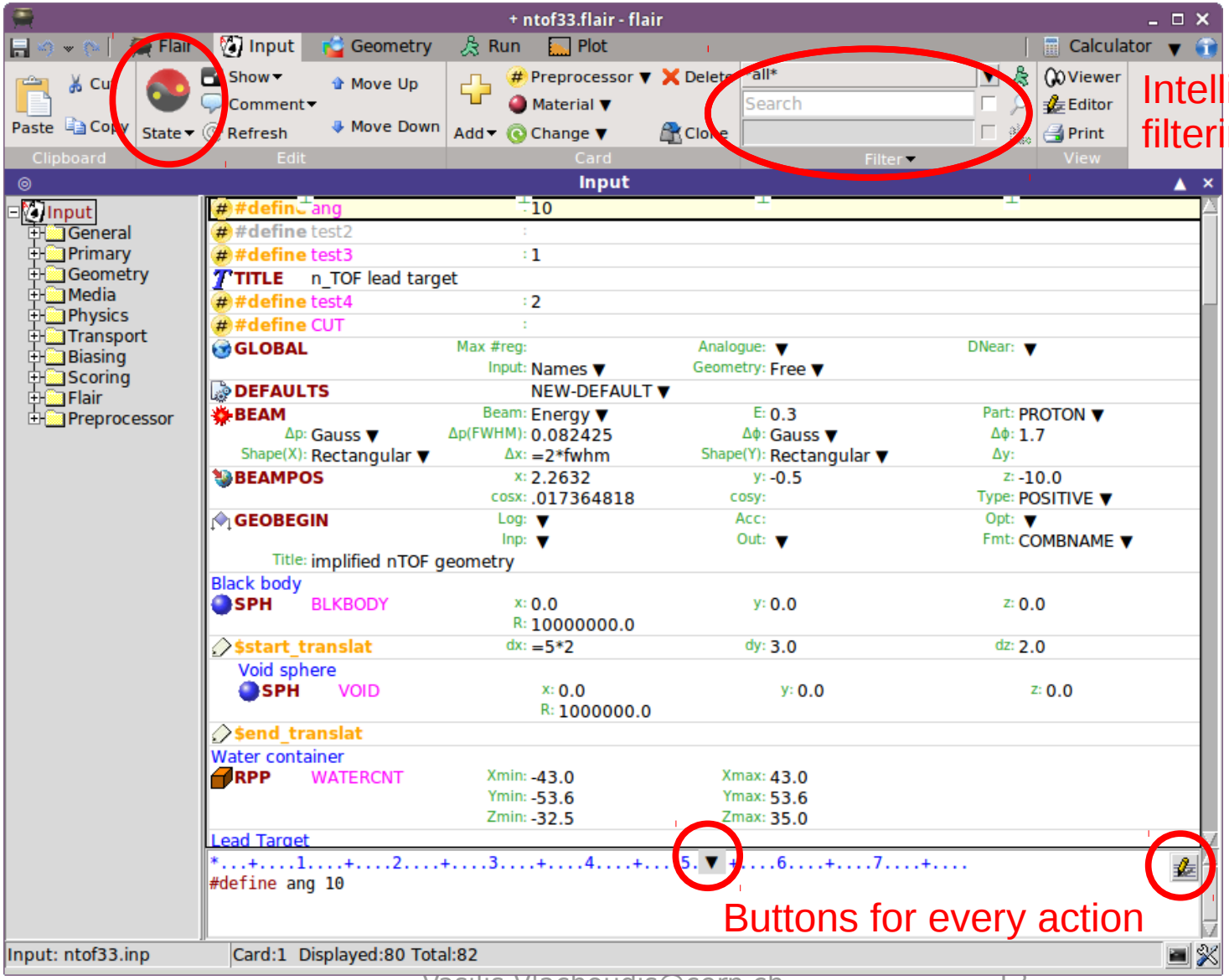


flair2 – multi docking



flair2 – input

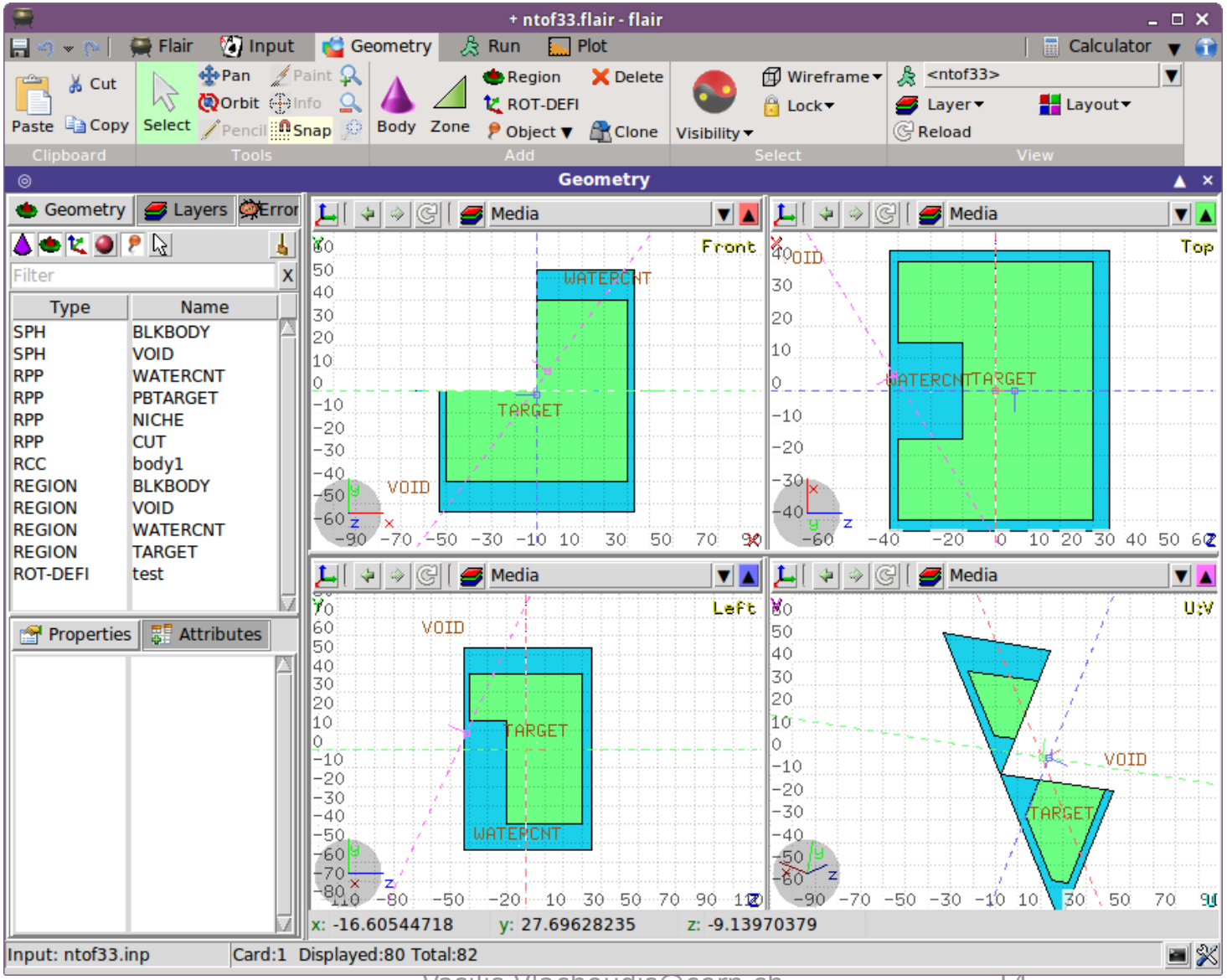
Import commands are bigger



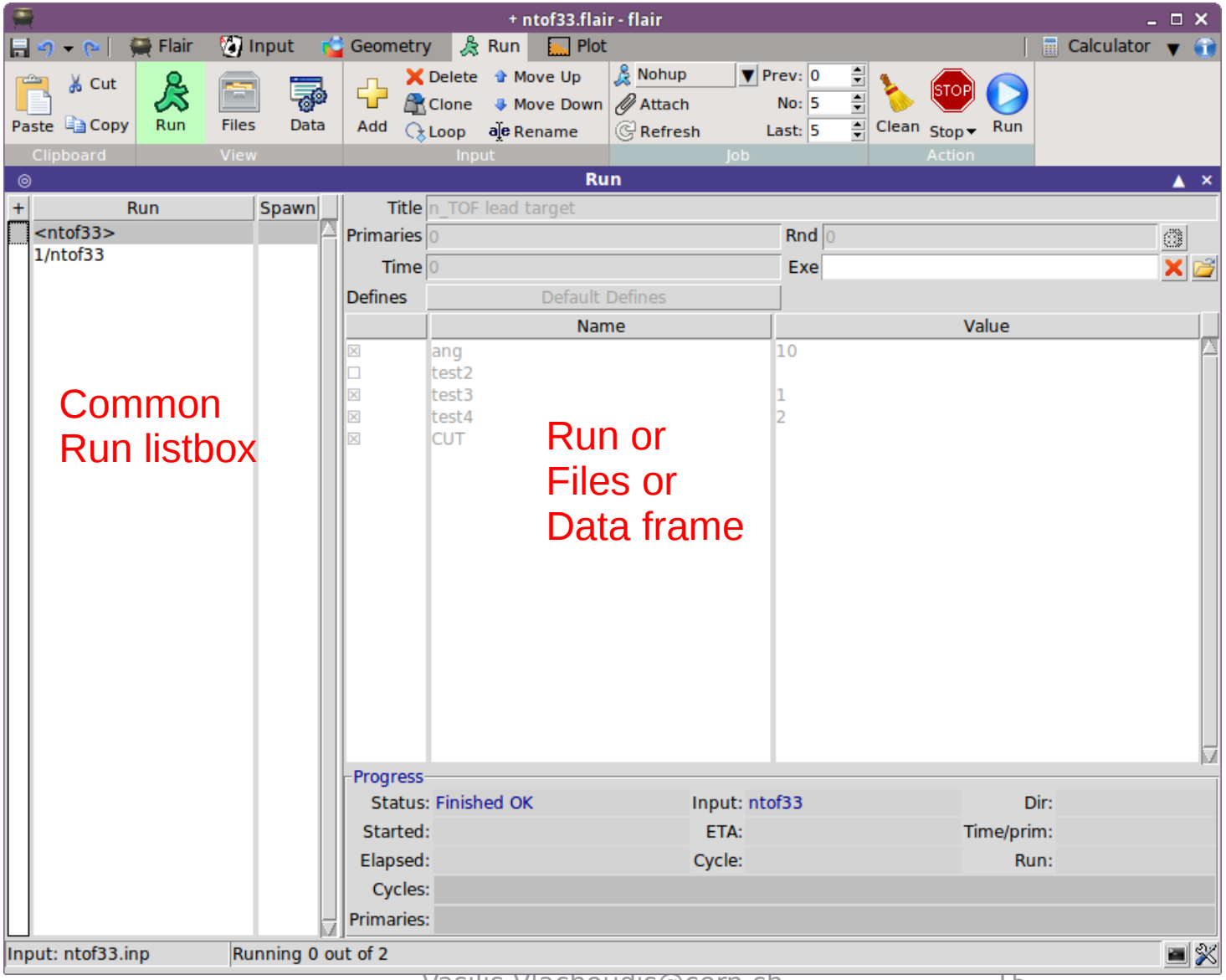
Intelligent filtering

Buttons for every action

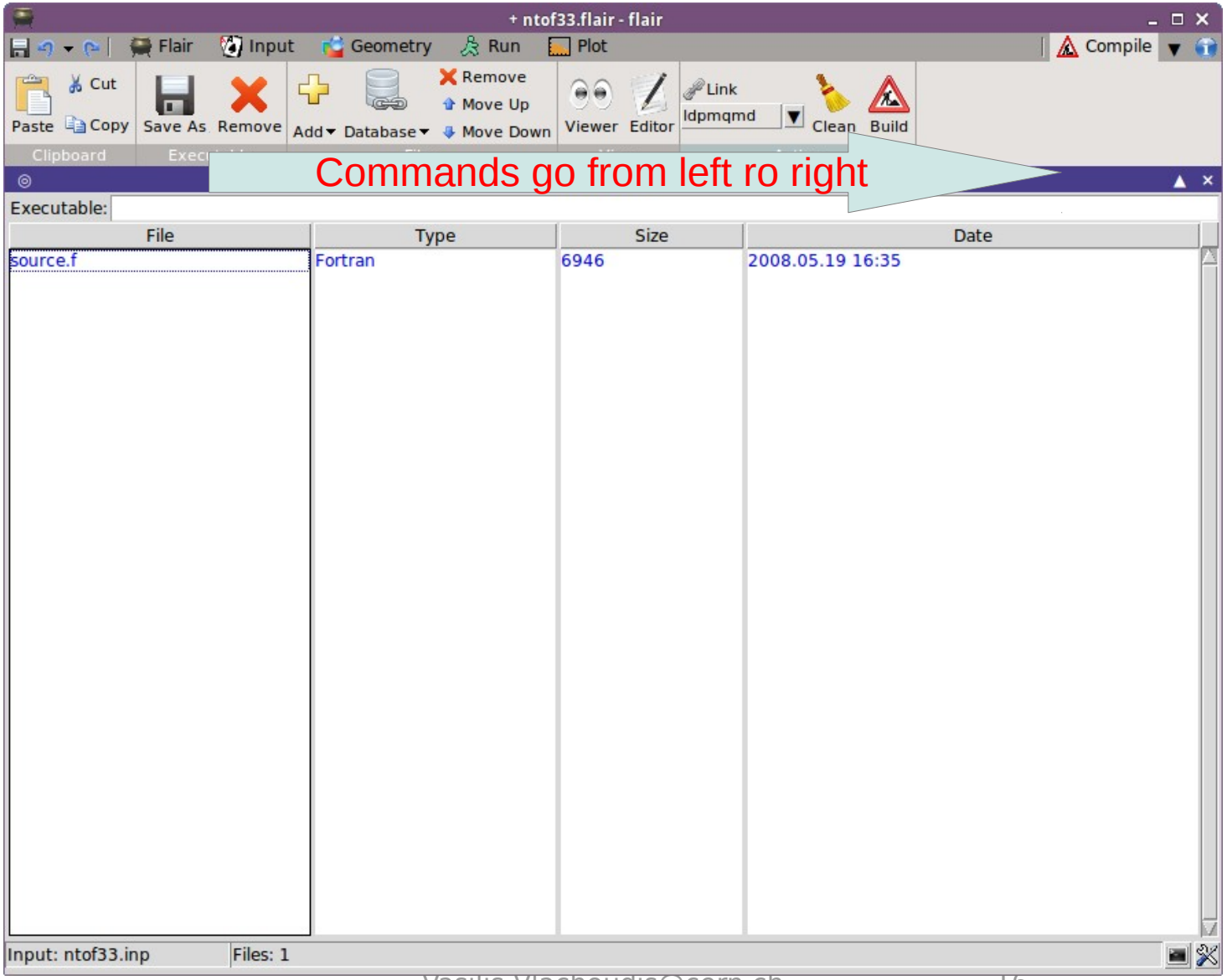
flair2 – geometry editor



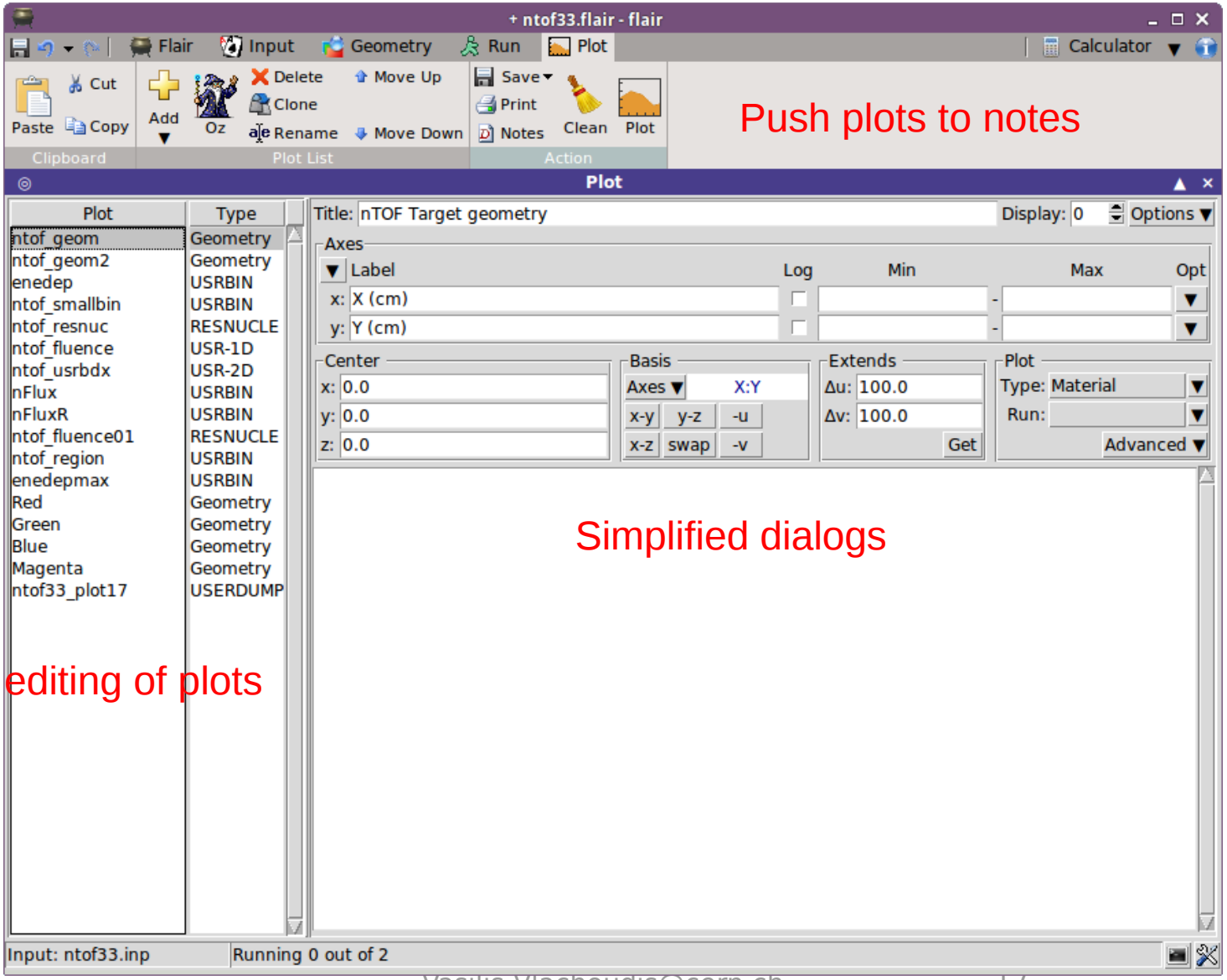
flair2 – run / files / data



flair2 – compile

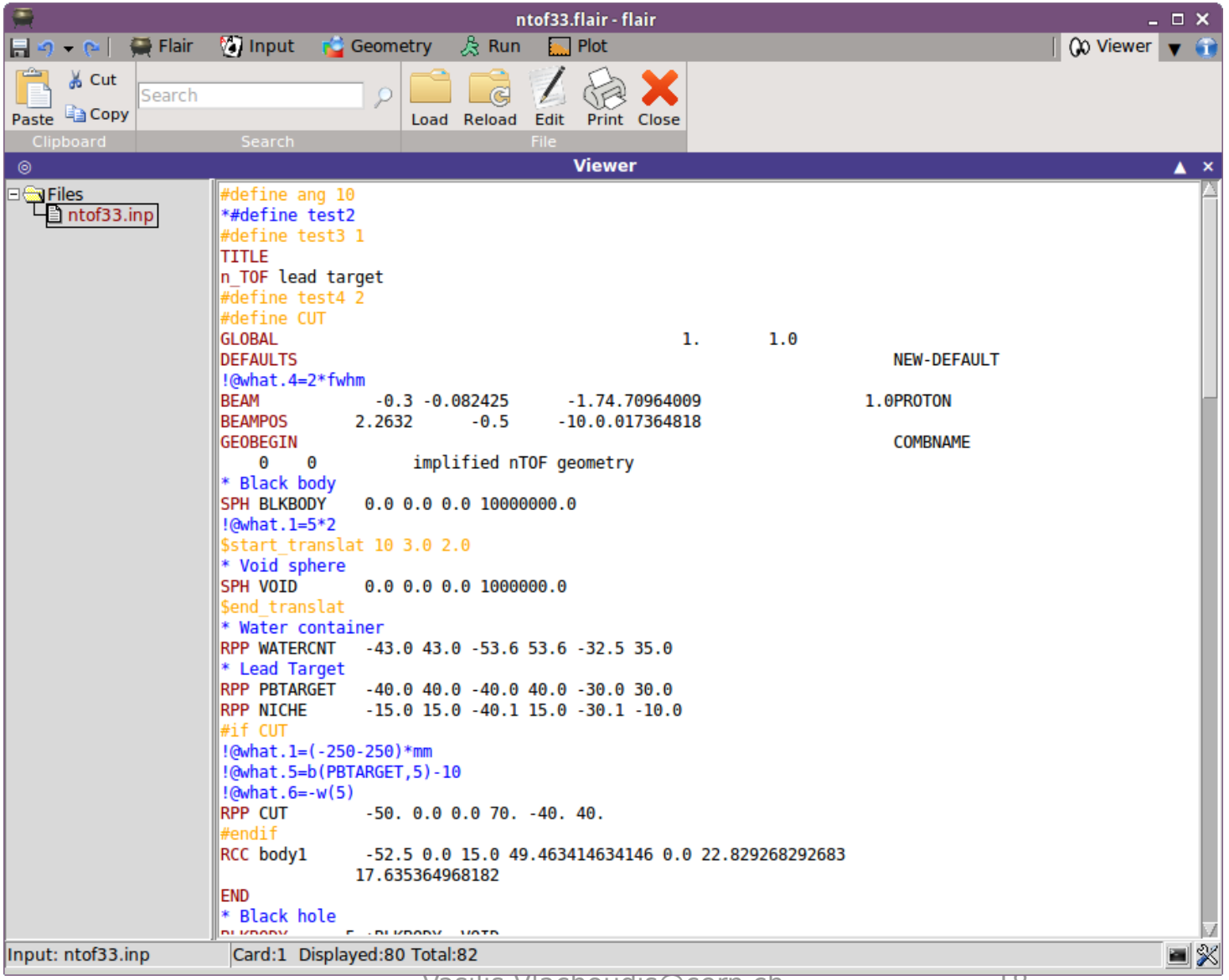


flair2 – plot

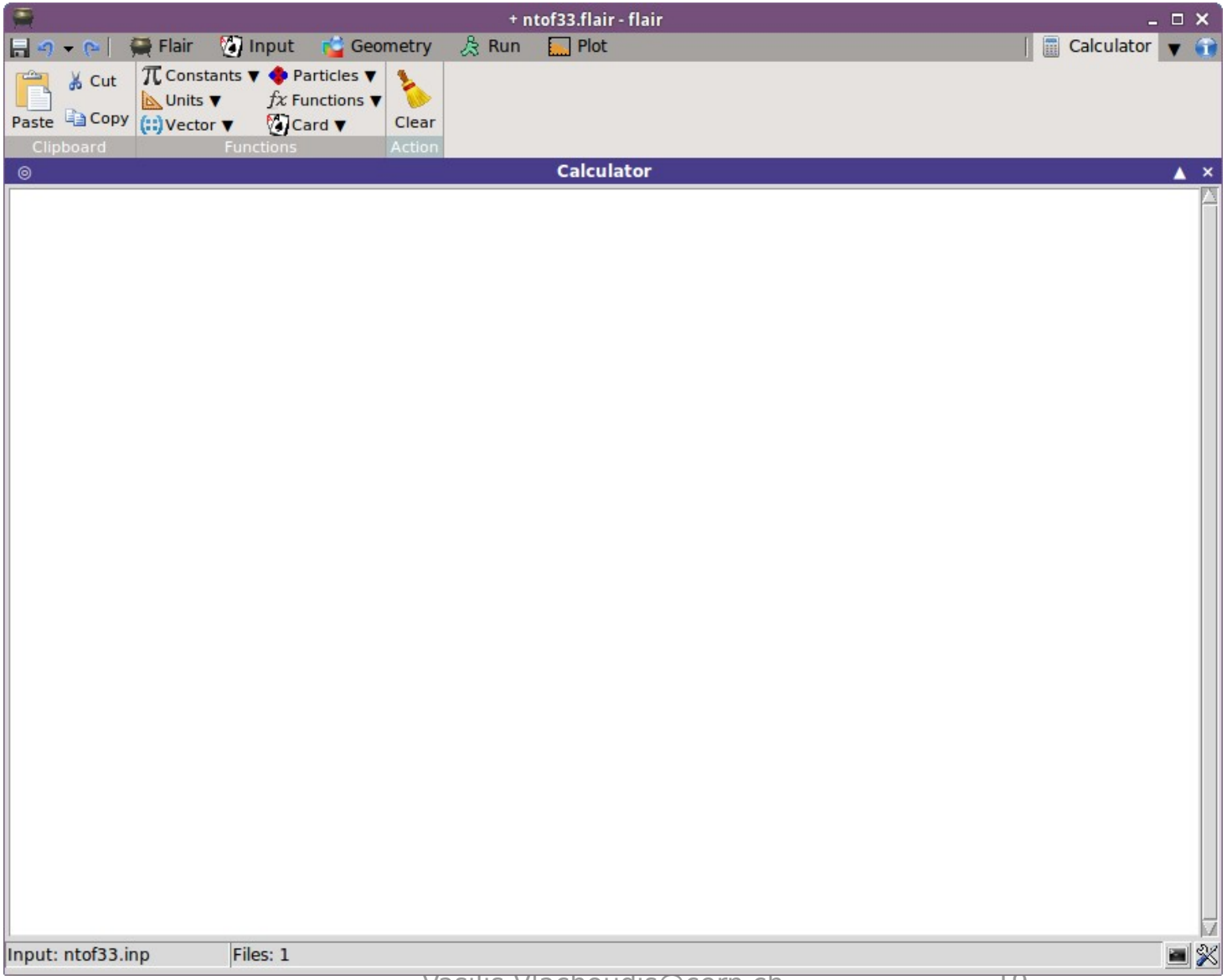


Multiple editing of plots

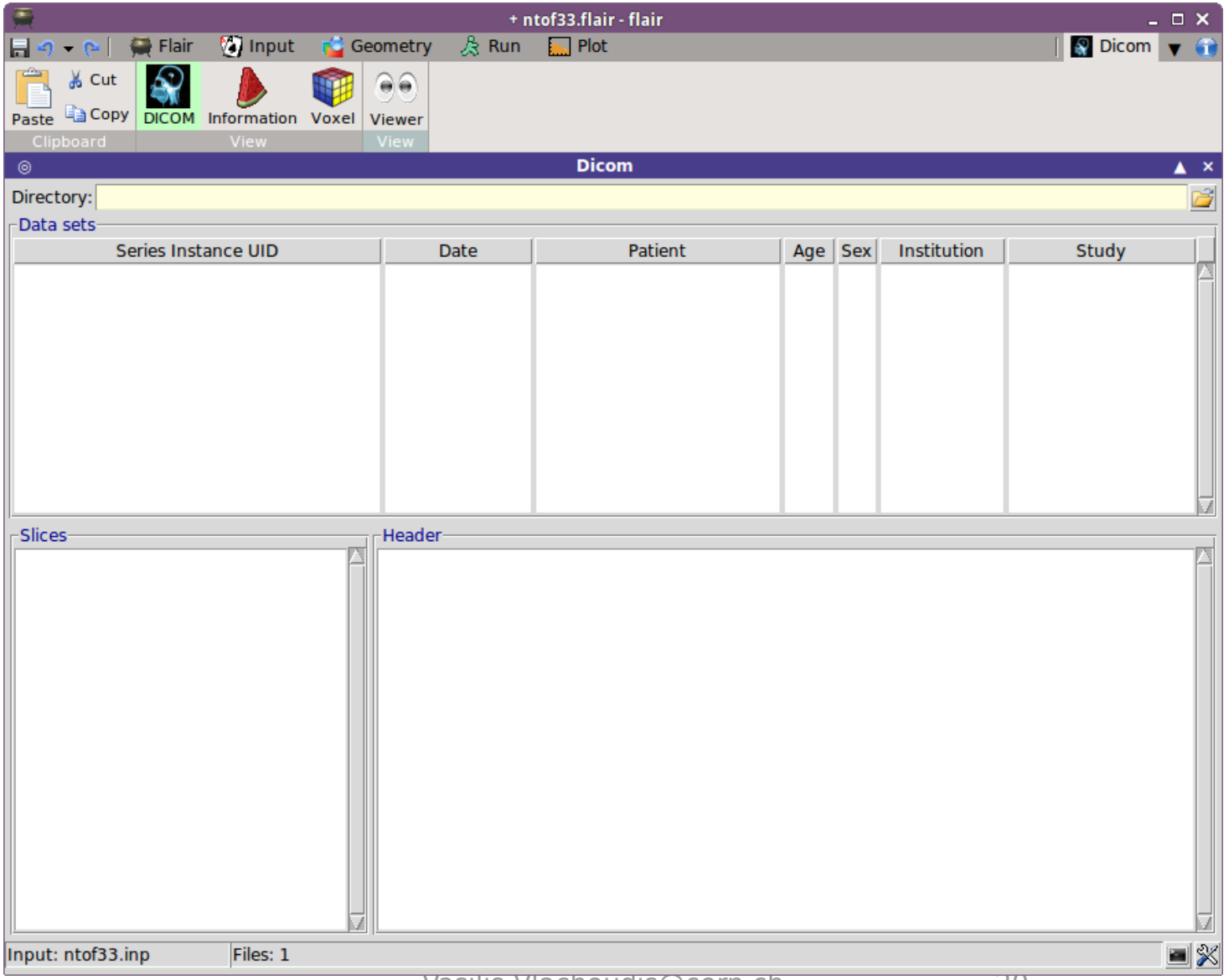
flair2 – viewer



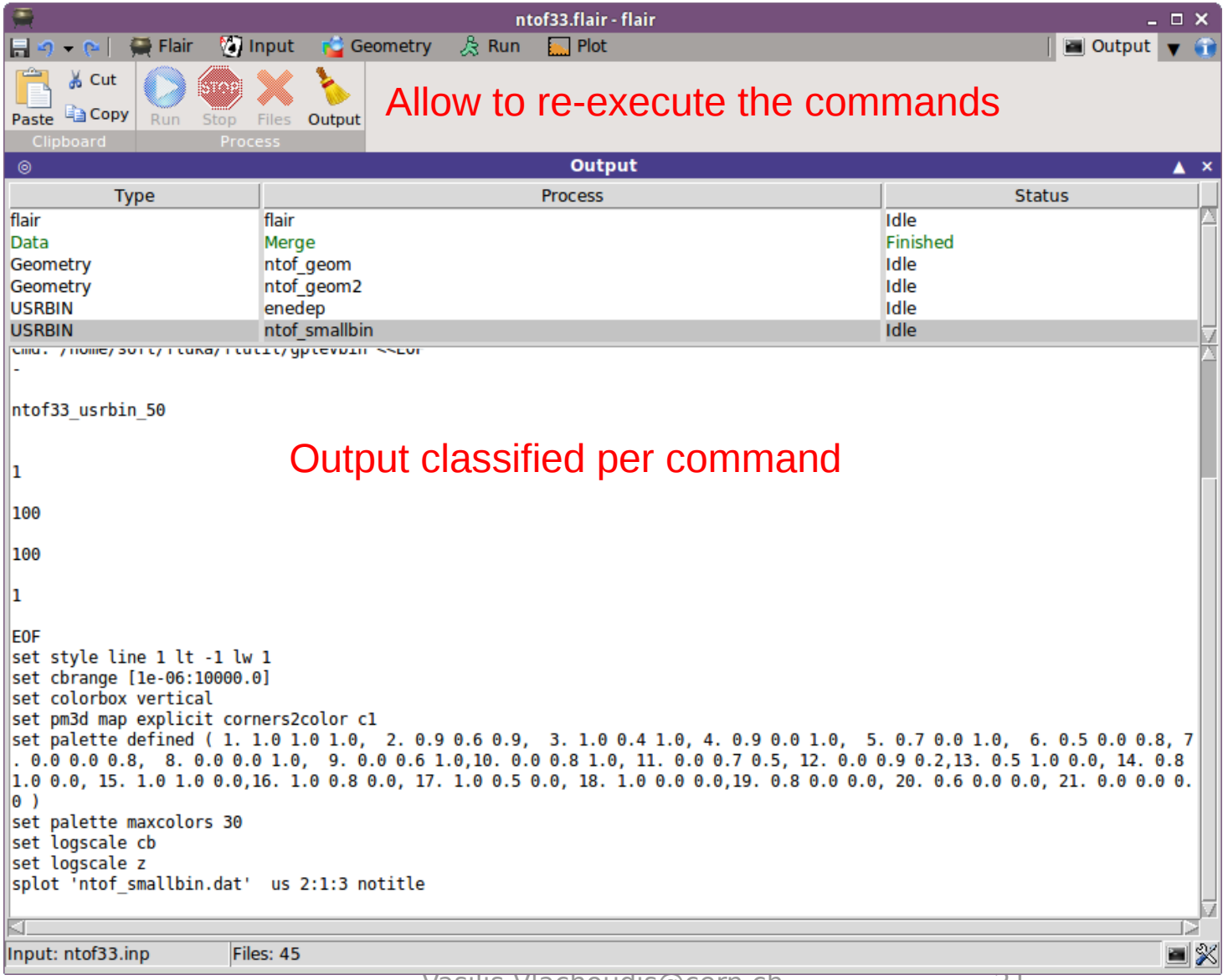
flair2 – calculator



flair2 – dicom



flair2 – output / cockpit



V2 still to do

- Dedicated status bar for each page
- cockpit for managing process
- make like dependence of processes
- Plots graph wizard
- automatic documentation (openoffice, latex)
- FLUKA geometry debugger to be integrated with geometry editor
- Additional faster 3D graphics with opencsg (to be checked)
- improved ray tracing
- Paint tool for geometry
- **Integrate**:
  - FLUKA element database
  - Line builder

svn co http://svnweb.cern.ch/guest/flair/branches/flair2