



flair for FLUKA

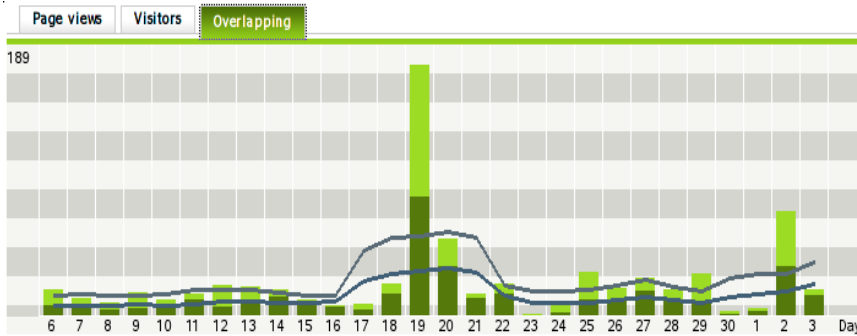
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FLUKA Collaboration Meeting 14/Dec/2007

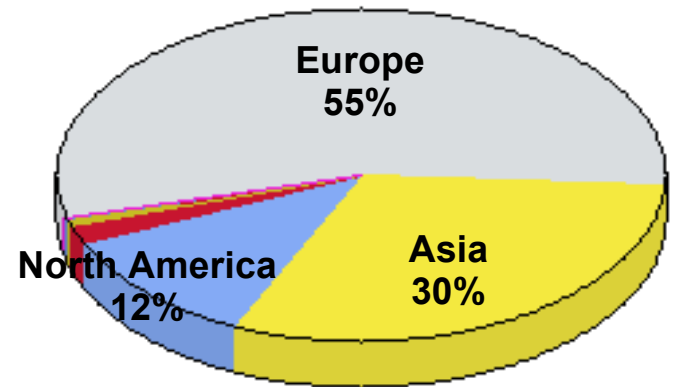
Flair History

- Jan 2005 During the FLUKA course at Houston, first idea about a possible graphical interface
- Mar 2006 Pavia FLUKA course confirmed the need of such an interface
- Jun 2006** Start working on the conceptual design
- Nov 2006 Announcement at the CERN FLUKA users meeting
- Dec 2006 Announcement at the FLUKA collaboration meeting
- May 2007** **Introduction and use with success** at the FLUKA course at Houston. The program is quite evolved and counting **~50'000 lines of code.**
- Jun 2007 First public announcement (v0.5) at the FLUKA users list. **250 downloads in the first 24h!**
- Oct 2007 Similar number of downloads observed for all subsequent releases

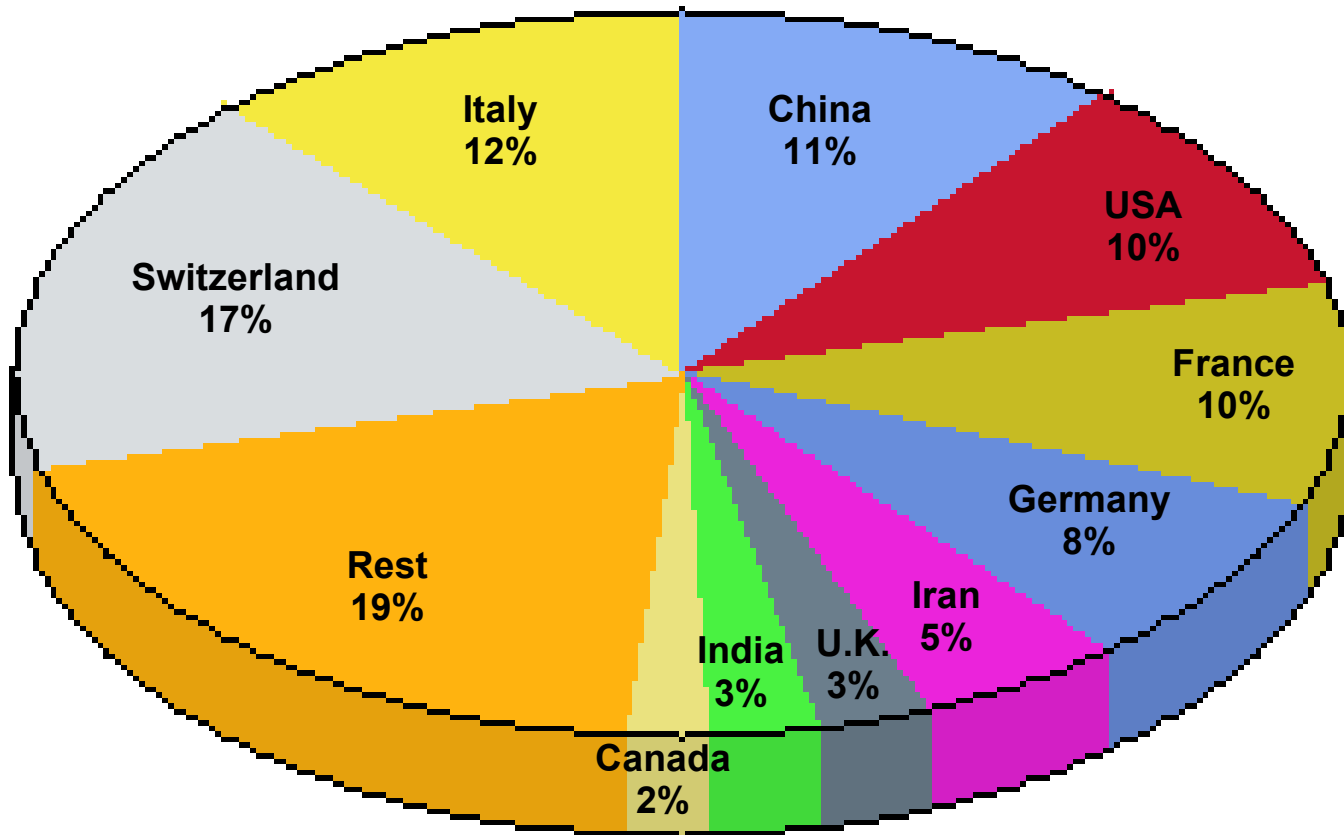
Website statistics



flair 0.5 announced in
FLUKA mailing list



Website – Country of origin



FLUKA Courses

- Flair was introduced with success in the FLUKA course of Houston and Legnaro 2007.
 - Proved to be stable enough even under the test of beginners
 - Reduced the number of technical problems (input file formatting, running, debugging etc.)
 - Helped in the learning of students (more concentrated on the simulation rather on technicalities)
 - It was helpful exercise to debug flair and check its robustness, but also to see students needs for extra features.
- **Concerns**
 - Forced the users on a slightly different organization than what they would have done on their own.
 - Correspondence between flair card layout and manual is not clear some times

Features Added in 0.5 & 0.6

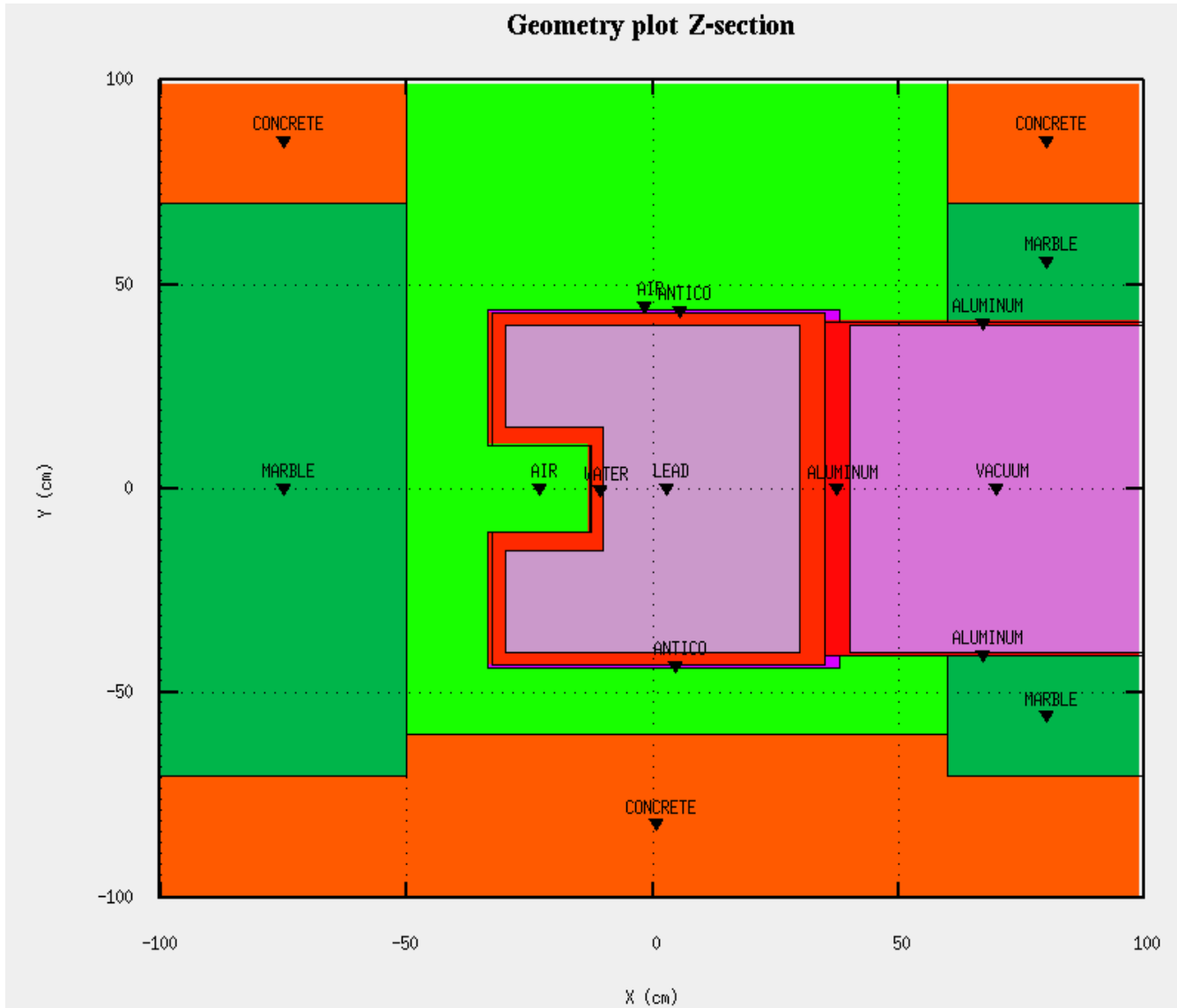
- Folding of Cards
- Dialog to modify manually the contents of a card
- Manual has now history. TOC & search listboxes are unified
- Output viewer now contains a tree browser
- Region volumes added
- Checking the existence of the \$FLUPRO/fluka hp during startup
- Web checking of version-major, minor and release number
- Exporting input in MCNP format
- Plotting:
 - Labels for material/region/lattices
 - Palette schemes, CPD from color-bands replaced by Max value
 - Combined Magnetic field intensity and vector field.
 - Very primitive USRDUMP plots (source particles and trajectories)
- All cards now have a layout (last ones added: OPT-PROD, OPT-PROP, POLARIZA, MCSTHRESH)

Folding of Cards

The screenshot displays the FLUKA FLAIR interface. The left sidebar shows a tree view of the project structure, with 'Primary' highlighted. The main window shows a list of cards, with 'BEAM' and 'BEAMPOS' expanded. The 'BEAM' card is folded to show its parameters: Beam: Energy (E: 20.0), Part: PROTON, Δp : Gauss ($\Delta p(\text{FWHM})$: 0.082425), $\Delta \phi$: Gauss ($\Delta \phi$: 1.7), Shape: Rectangular (Δx : , Δy : , Weight: 1.0). The 'BEAMPOS' card is also folded, showing coordinates: x: 2.2632, y: -0.5, z: -10.0, cosx: -0.17365, cosy: 0.0, Dirz: POSITIVE. The interface includes a menu bar (File, Edit, Card, Input, Tools, View, Options, Help), a toolbar, and a status bar at the bottom showing 'Inp: tutorial.inp', 'Exe:', 'Dir: /home/bnv/prg/physics/fluka/flair/examples', and 'Card:1-3 Filtered:6 Total:32'.

Card	Parameter	Value
BEAM	Beam: Energy	E: 20.0
	Part	Part: PROTON
	Δp : Gauss	$\Delta p(\text{FWHM})$: 0.082425
	$\Delta \phi$: Gauss	$\Delta \phi$: 1.7
BEAMPOS	x	2.2632
	y	-0.5
BEAMPOS	z	-10.0
	Dirz	Dirz: POSITIVE
START	No.	100.0
	Report	Report: default
STOP	Time	

Labels in geometry



Features to be added for V1.0

- **Interface**
 - Working on multiple projects
- **Input Editor**
 - Full Undo/Redo
 - Geometry manipulation (Transformations, CSG optimization etc)
 - Error checking on correlated information
- **Manual**
 - Correspondence of FLUKA whats with flair cards
- **Post Processing**
 - Re-binning or USRBINS
 - Maximum trace
- **Plotting:**
 - Information of Input File
 - Double differential quantities for USRBDX
 - 3D Visualization via OpenGL or Ray Tracing