TOTAL CRYSTALOGRAPHY
FABLE
Graphical User Interface (GUI)

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Content

- Fable 1.0.0 : GUI
  - Why ? What ? Where ?
- Eclipse RCP
  - Why ? What ? Where?
  - functionalities available in fable
- Installation guide for users
- Improvements
- Java developers : How to?
- Questions
- Test : web pages links, java program ("hello gaelle")

Why a Graphical User Interface (GUI) ?

- Help user in using TotalCryst programs made in different programming language
- Put different programs together to achieve one goal : analyze crystallographic data
- Update site
- On line help
- ImageViewer
- New functionalities :
  - Text editors
  - Plot 2d and 3d
  - Displays spots found by peaksearch on imageviewer

Presentation

A set of 6 programs written in different languages and compiled for windows 32, linux, linux64 :

– **PolyXSim** : 3DXRD far-field simulation of polycrystals, python program

– **Preprocessor** : spd/c code

– ImageD11 : python script

   – **Peaksearch** : Peak searching

   – **Calibration**

   – **Transform** } put together in one plug-in/perspective

– **Grainspotter** : c/c++ program for indexing grains

– **ImageViewer** : Java plugin to display images and do simple treatement on images (rocking curves, subtract dark, difference …)

Source forge

- Open source : Gnu public license
- On sourceforge : https://sourceforge.net/projects/fable/
  - sources, downloads, bugs report
- wiki

  http://fable.wiki.sourceforge.net/

- Subscribe to mailing-list : fable-talk

Why Eclipse RCP? Because of its power !

– A platform for building and deploying Rich
Client aPplication (RCP).

– Deploy professional–looking application

– Native look–and–feel to a variety of desktop
operating system: Windows, Linux, Mac OsX

– Focus on their value add

– Large community

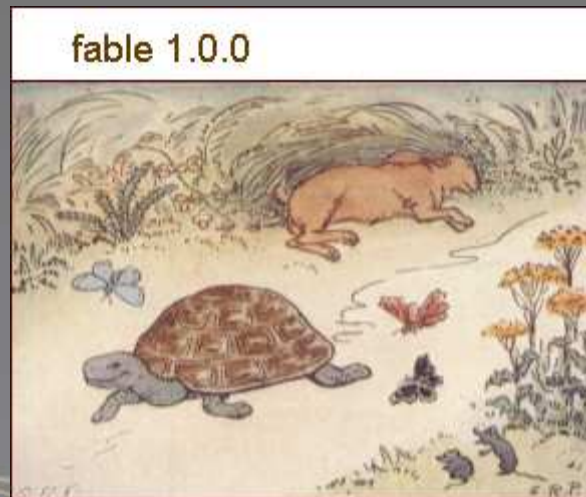# Native look and feel

What does eclipse provides ?

– Eclipse RCP components can be used to build just about any client application.

– Other components are available for reuse :

  • Brand application (splash screen for example)

  • Online help

  • Update site

  • ...

– Fable is Extensible : add your own plug-in to fable (
see example with jmol (Java molecular viewer for three-dimensional chemical structures))
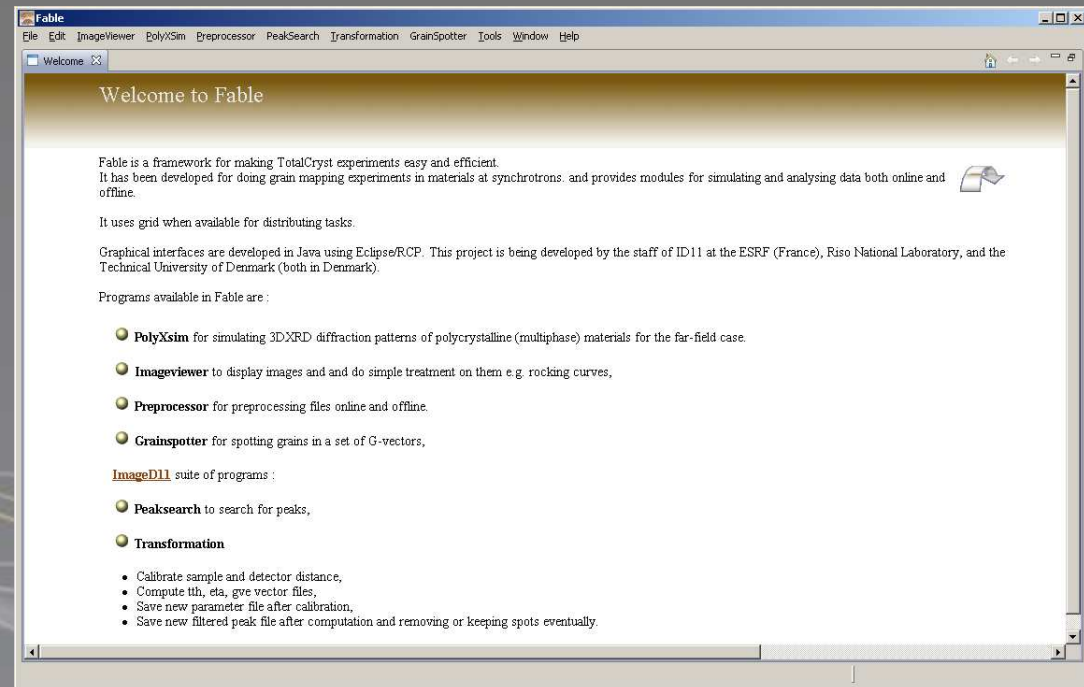
Splash Screen

Application name: fable
Version: 1.0.0

Welcome Screen

- The first time
- Fable summary
- Available from Menu Help/Welcome
- Close or Goes to workbench

Workbench

Main window (−)
Perspective:
• Views : Processing, program options, file viewer …
• Editors : ini file, flt files,
• Console : Provides output messages to user

Movable views and console

Menu Bar
• File
    • Load (ini files, sample …)
    • Open
    • Exit application
• Edit
    • Preferences : Change default program settings with yours and find them each time you launch the program
• Help
    • About : version and text about the program
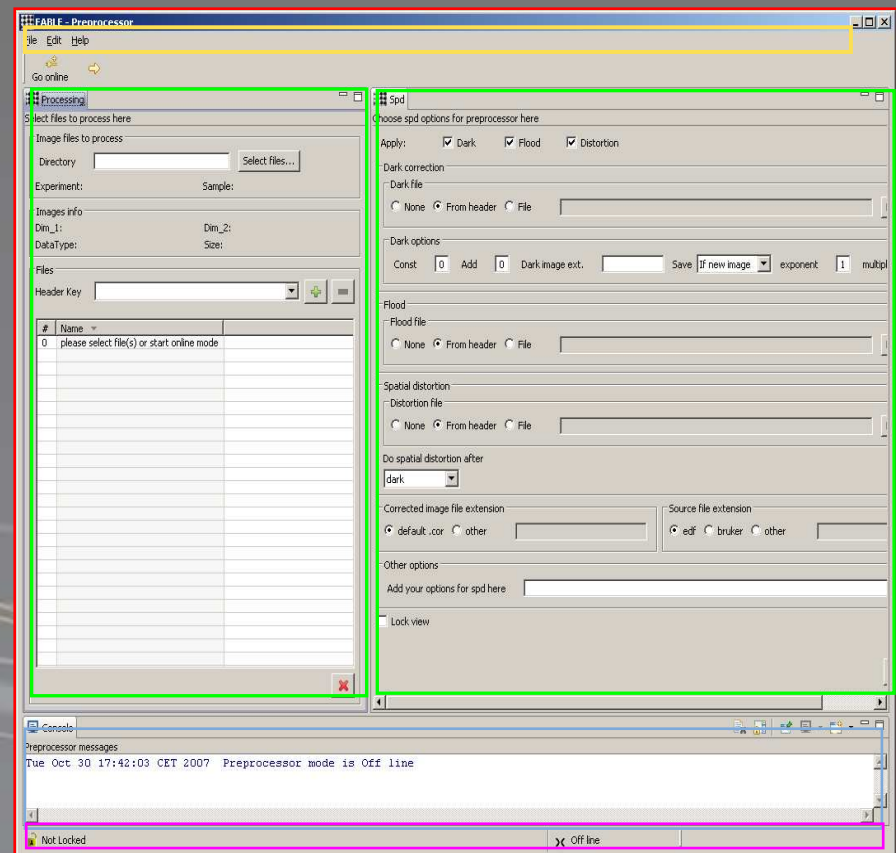   • On line help for all plugin available in the application

Cool bar
Button short cuts for program actions (launching, switch to on/off line mode)
Reset layout : to restore intial workbench layout as views are movable and detachable
Open workbench (perspective)

Status bar
Displays program status (on line/off line)

Menus

- File : Open/close/edit
- Edit : Editors actions : cut/past/select/find
- Tools : Extra tools like plotting, python infos
- Window : Eclipse RCP functionalities : reset perspective, preferences…
- Help : about, fable help, update manager.
- One menu per perspective : (peaksearch, Imageviewer …)
  - Actions : run, plot …
  - Open files : in table, in editors …
  - Open Perspective.

Coolbar

Buttons :

– Short cuts to Menu

– View : buttons/menu are enabled when view is active

– Editor (Grainspotter ini file) : buttons are visible when editor is active (save and save as)

Perspective

– An organization of views and Editors.

– Can be switch to.

– In fable, one or two perspectives per program :
  – for "small screen" : for screens less than 15 inches
  – Larger screen is default perspective.
  – 2 perspectives for :
    – Preprocessor
    – Peaksearch
    – Imageviewer

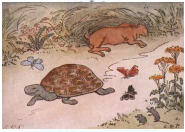– Restore arrangement of views in a perspective : Menu Window/Reset Perspective

View vs editors

- Important to know the difference between view and editors
- Originally : Everything was made with views BUT Editors appeared as an evidence to "edit files".
- Placeholder are different : placeholder can not be removed : if no editor is opened, an empty placeholder appears. (see peaksearch default perspective)

- Editors :
 - Ask for save on close
 - Buttons appears when editor is active
 - Can't be detached, but can move

 - Views
 - Can be detached,
 - Can move,
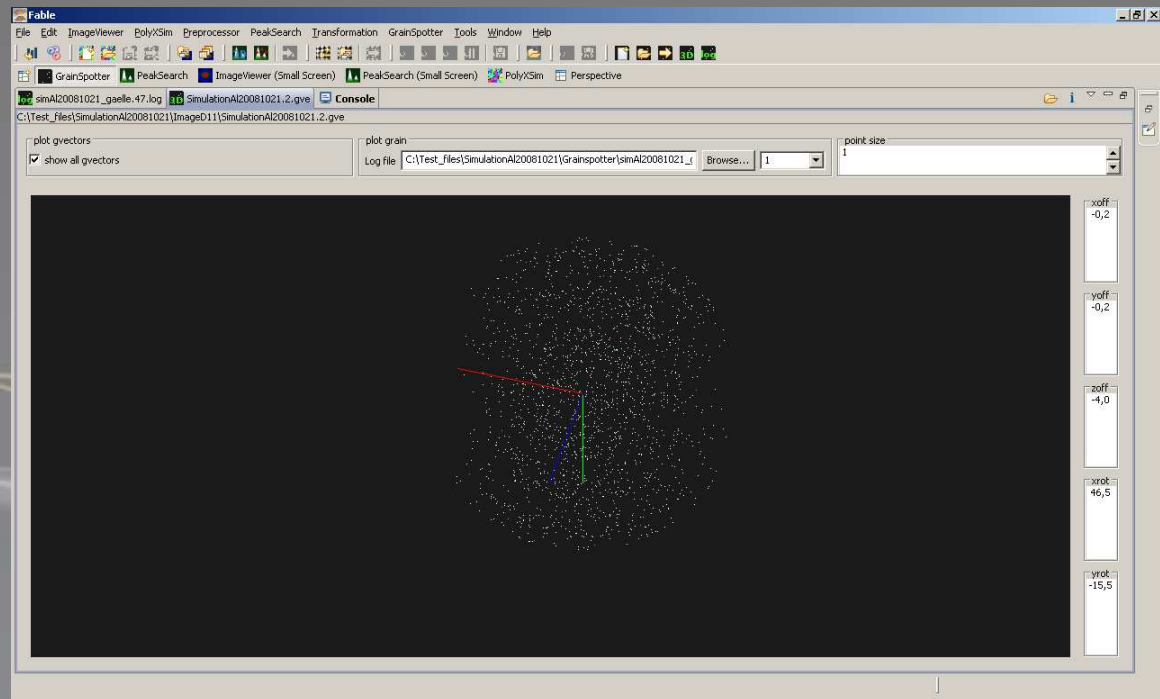 - Can be closed or not (Image Navigator),

Preferences

fable

– Your preferences.

– Menu Window/Preferences

– Preferences for program : options

– Others :

    – Fabio : i/o mudule used to load images in fable. In the image navigator, you can have a filter here.

3D view

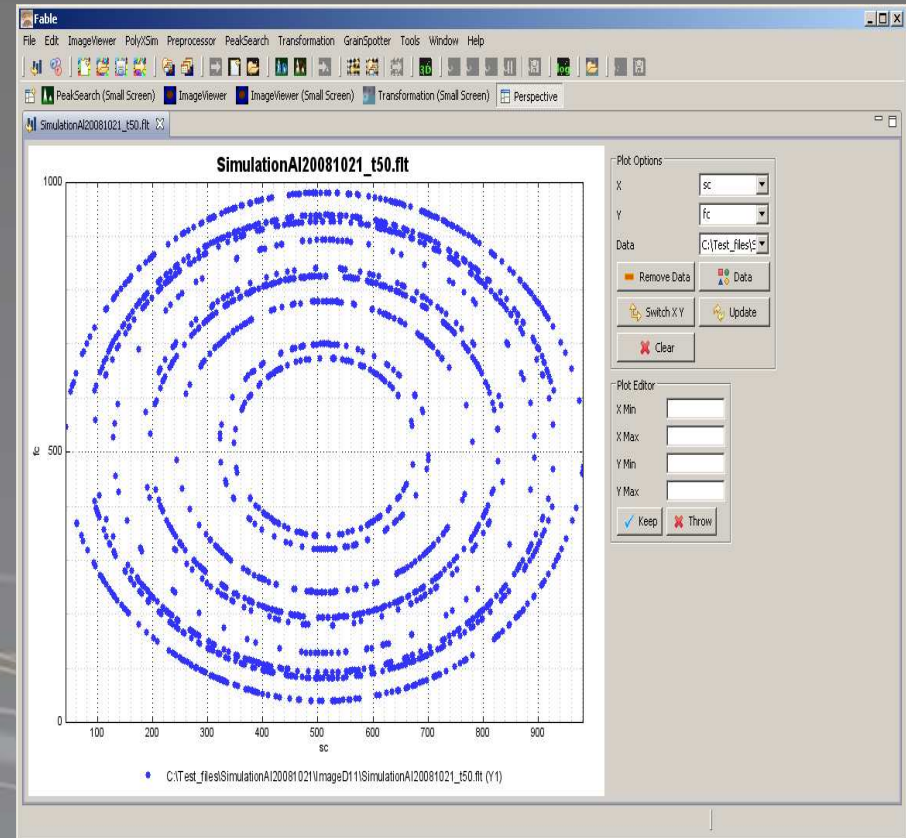- Plot : 3D plot view for Grainspotter output file
- Relief for imageviewer

2D plot

– JLChart (Esrf plug-in)

– Plots Column file : any type of files with data arranged in columns

–Remove/Keep data

–Save / Save as … column file

Decorated fields and buttons

Decorated fields

- Options Required :
- Invalid fields :

Buttons

- Launch: Stop

- Delete: Add

- Revert:

- Subtract:

Workshop DVD content

- wiki : http://fable.wiki.sourceforge.net/
- Abstract : workshop abstract
- DataSet : C_AL_S1
- Developers : Eclipse and target platform
- pyfable : python programs
- Fable Linux/windows
  - Fable
  - Python 2.5
  - Java JRE 1.6.13

GUI Users : what do you need ?

- Java :
  Java SE Runtime Environment 1.6 or later
  http://java.sun.com/javase/downloads/index.jsp

- Python : 2.5

- Unzip fable GUI (https://sourceforge.net/projects/fable/)
- Install PIL available on the DVD (pyfable directory)

Depending on your OS :
Linux_x86
Linux_x86_64
win32

- Launch application:
  - You have installed all python programs and libraries available in pyfable directory?
    - You can launch fable(.exe) program. Python programs used in application are those which have been installed on your computer.
  - You haven't installed all python programs available in pyfable directory?
    - Please launch run_fable script. This script will use python programs available in fable/python directory

→C programs are wrapped into plugins available in Fable application
→Example : Preprocessor used spd. A plug-in has been made for this executable.
  → This plugin has been added in the dependencies and it becomes a part of fable product when it is exported.
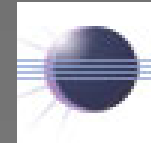
Fable directory content

- 📁 configuration : eclipse configuration
- 📁 features: features folder used in update site
- 📁 plugins: plugins folder (deployed as jar files)
- 📁 Python: python programs needed in fable application.
- 📄 .eclipseproduct : eclipse product file
- 🖼 fable(.exe) : fable application
- 📄 fable.ini : ini file for fable
- 📄 fable.log : fable log file. Send this file with a bug tracker.
- **run_fable(**.bat/sh**)** : Edit this file to set the right path if an error occurs when you launch it.
    - set python path to Python directory to pick these programs if they are not available on the directory.
    - For **linux** OS : export **LD_PRELOAD** to load python for jepp (Java embedded python)
        - Example : export LD_PRELOAD=/usr/lib/libpython2.5.so.1.0
    - Launch fable application

- 📁 workspace: created and updated dynamically. Your current workspace which stores your preferences and layout. Remove it if you want to reset your workspace.

Developers :
Eclipse Rich Client Application (RCP)

– Create an account on sourceforge and send an e-mail to fable admin to get involved in the project,

– Install Eclipse RCP : Java SDK and IDE : Ganymede: www.eclipse.org

– Team project management: SVN (plugin eclipse subversive from polarion http://www.polarion.org/index.php?page=overview&project=subversive)

– Follow the guideline and convention

Do you need some help ?

For Gui users please contact your favorite helpdesk

gaelle.suchet@esrf.fr

andy.gotz@esrf.fr

For java eclipse programmers :

gaelle.suchet@esrf.fr

andy.gotz@esrf.fr

Data analysis

Please, refer to the programmer author

Bugs reports

http://sourceforge.net/projects/fable/

No need to be Logged On (no need to have an account on SF)

Submit a new bug : select **Tracker/ProjectName/Submit New**

- Describe your bug. Upload fable.log available in your workspace.
- Assign to gaelle_suchet or Andy_gotz for Gui issues.
- How to report bugs effectively :

    http://www.chiark.greenend.org.uk/~sgtatham/bugs.html

Improvements

- For developers
  - Improve guidelines and convention :
    - Naming convention
    - Coding convention
    - Javadoc
    - User interface guideline
    - Version numbering
  - Fable committer : rules to define.

  - Gui
    Move views to editors
    Icons should e the same for the same functionalities
    Fix bugs
    Add programs available on sourceforge (fabric, fitallb at least)

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