



# BlissFramework and mxCuBE usage on PROXIMA1

mxCuBE meeting ESRF Sept 2010

# Whate we had before mxCuBE

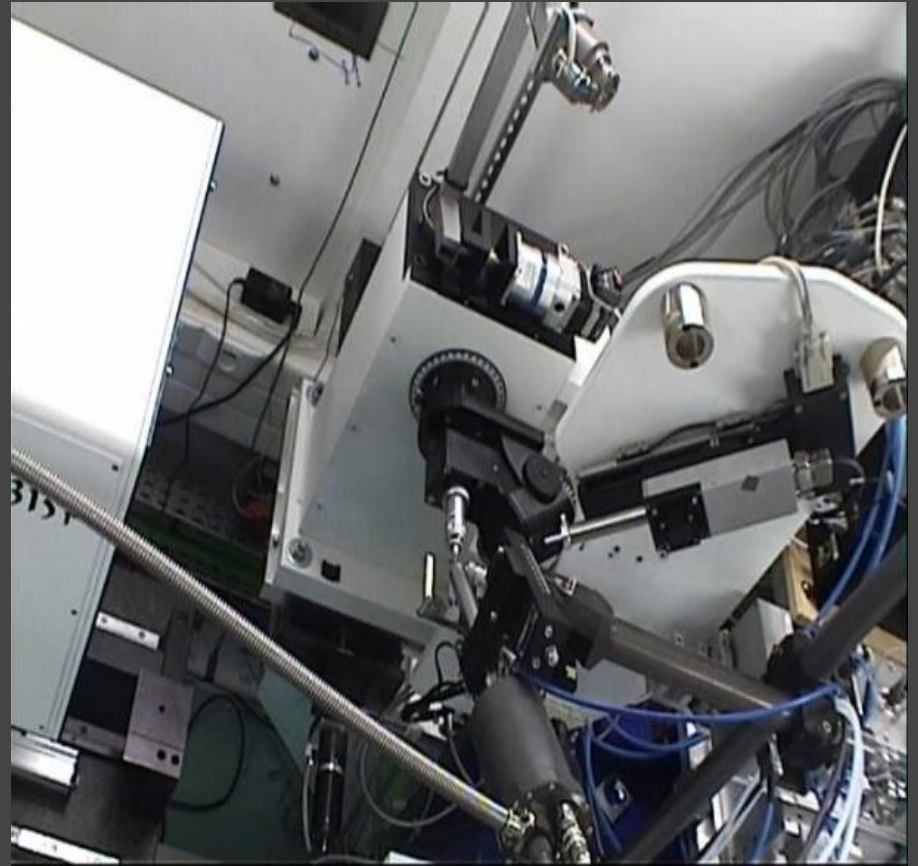
Proprietary Hardware + Software solution from MSC-Rigagus

- Kappa goniometer
- Camera + zoom + light
- Motorized beamstop
- Motorized fluo det.
- Actor Robot
- JDirector/MSCserver
- Cameraman

ADSC 315r detector

2008: After a long discussions

including our users we have decided to move to mxCuBE



# PX1 Experience

## Gain:

- **Ergonomy uniformity**: Users don't have to be trained, they know how to use it.
- Clean MVC design
- Bricks encapsulate a lot of logic
- Hardware Objects used as templates
- Relatively easy to modify and develop (thanks to python)
- Robus

## Constraints

- **Hardware/control**: Not using spec, no MD2...
- **No support from our computing group**
- **No Tango events at SOLEIL**: pooling slow responding devices kills GUI reactivity

File Help

## Sample centering

 Manual 3-click

 Computer automatic

 User confirms

 Light:   
 Goniometer

## Motors

 phi:  

Commands

Load Center

phi: 0.000 kappa: 0.000 omega: 0.000

 MicroGlide

## Motors

 X:  

Commands

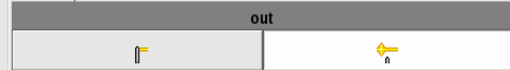
Home

X: 390 Y: -73 Z: -433

## Beam size

 Hor:   Ver:   Move: Offsets

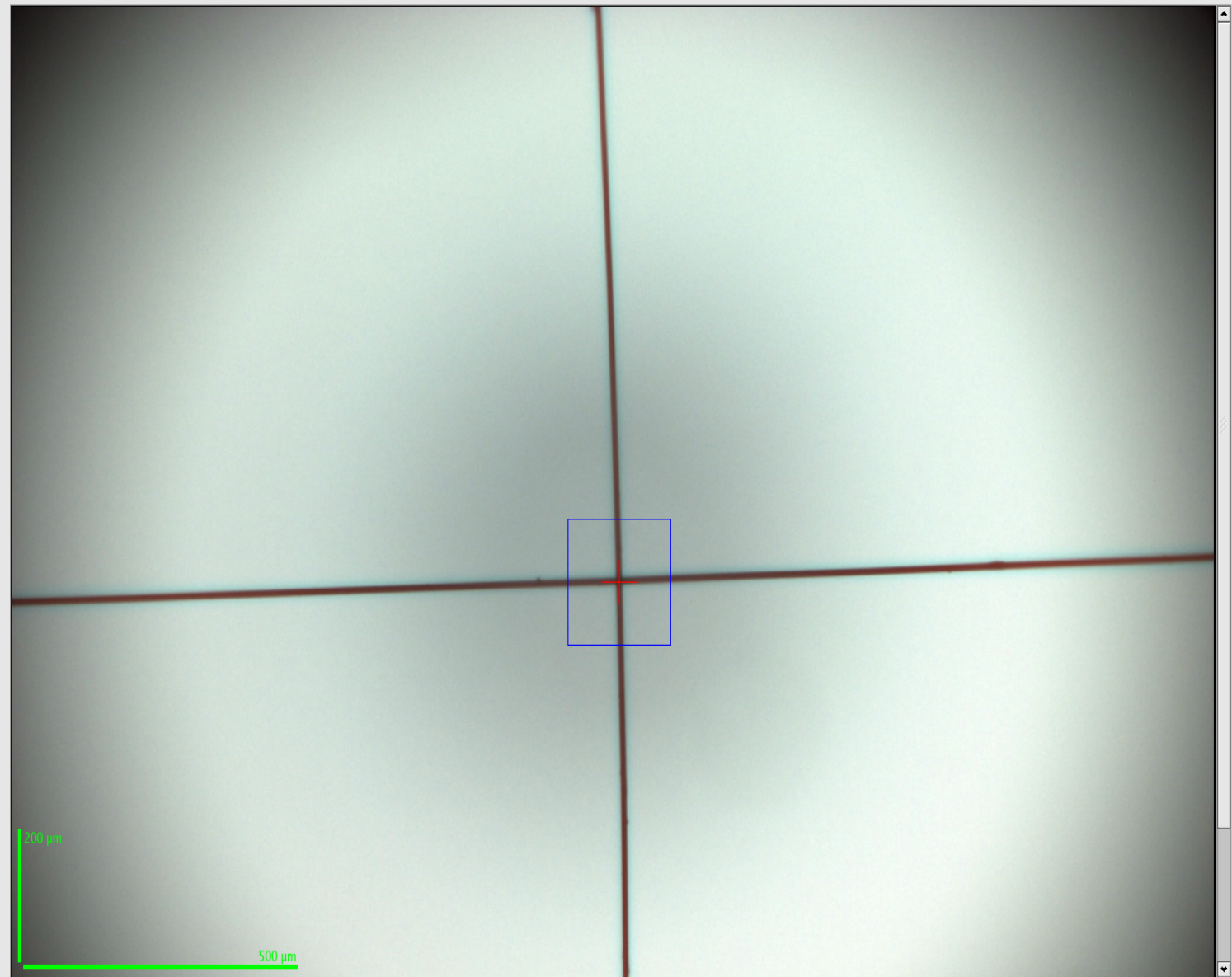
## Beamstop



Gain

Exposure in s

X: 510 Y: 8

```

2010-03-10 10:34:38 TangoBeamstop.stateChanged: new state = EXTENDED
2010-03-10 10:34:38 TangoMotor.move to absolute position: 7.000
2010-03-10 10:34:38 /light: TangoMotor.getState, ON
2010-03-10 10:34:38 /light: TangoMotor.motorStateChanged, 2
2010-03-10 10:34:38 /light: TangoMotor.isReady
2010-03-10 10:34:38 TangoMotor.getLimits: 0.0000 100.0000
2010-03-10 10:34:38 /light: TangoMotor.positionChanged, : 20.000
2010-03-10 10:34:39 /light: TangoMotor.positionChanged, : 7.000
  
```

File Help

Expert mode

Energy

Current: 6.6400 keV 1.867 Å

Move to: [redacted] keV + \*

Resolution

Current: 7.409 Å 610.00 mm

Move to: [redacted] Å

Parameters

Prefix: test Directory: /tmp Browse

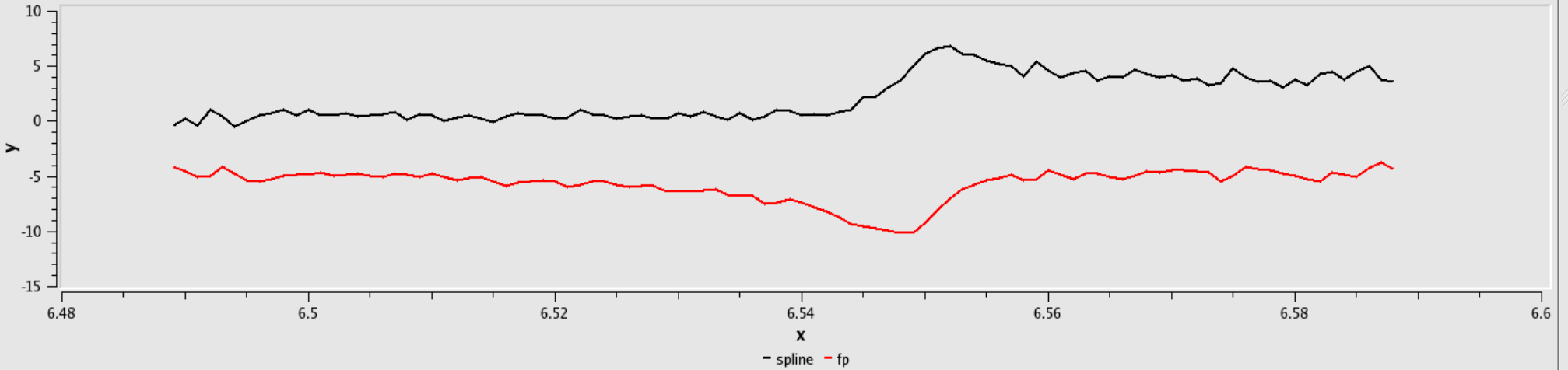
Energy scan



Mn - K

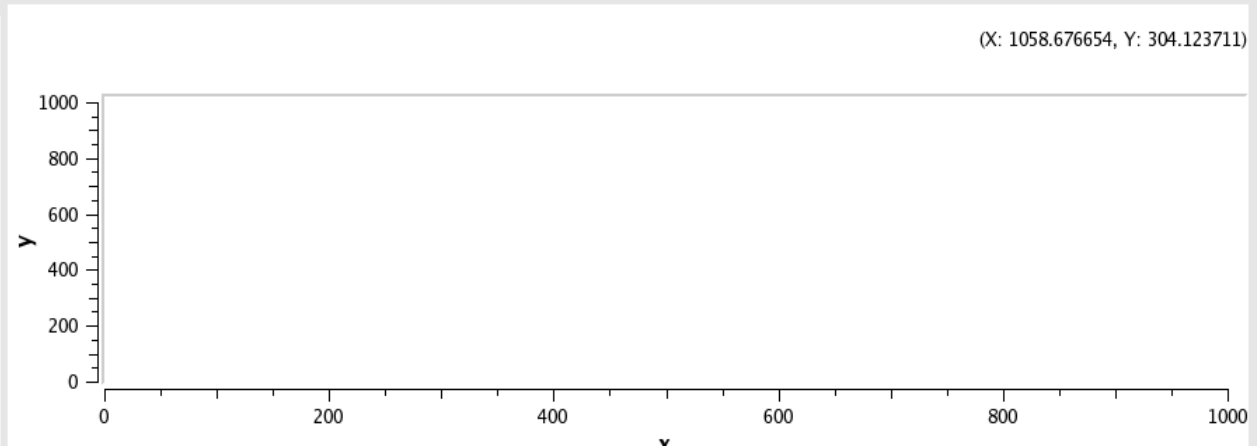
Peak: 6.5520 Inflection: 6.5480 Remote: 6.6020 2nd Remote: [yellow box] Accept Reset

energy f f'  
6.55199696318 -6.94 6.82  
6.54799696385 -10.15 3.75



Available elements

H																	He		
Li	Be	Mn - K (25,manganese)												B	C	N	O	F	Ne
Na	Mg													Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr		
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe		
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn		
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt											
Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu						
Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr						



Collect

 Energy

Current: 12.6500 keV 0.9801 Å

Move to:  keV  

Transmission by filters

Current: 100.00%

Set to:  

Transmission by primary slits

Current: 100.03%

Set to:  

Resolution

Current: 2.628 Å 400.00 mm

Move to:  Å  

Front end shutter

opened

Open

Close

Safety shutter

closed

Open

Close

Parameters

Queue (0)

Status

Directory: /data/proxima1-soleil/2010\_Run2/2010\_04\_08

Browse

Prefix: prefix Axis: Phi

Run number: 1 Oscillation start (deg):  +0.00

Template: prefix\_1\_###.img Oscillation range (deg): +1.00

First image #: 1 Oscillation step (deg): +1.00

Number of images: 1 Exposure time (s): 1.0

Number of passes: 1

Comments:  Inverse beam:  Interval:  1

Detector mode: Hardware binned



Collect data

Stop collection

Skip oscillation

Elapsed: 00:00:00

Remaining: 00:00:00

Abort!

logview

```

2010-04-08 07:50:23 HOS Attenuator: passe dans attStateChanged
2010-04-08 07:50:23 HOS Attenuator: passe dans getAttState
2010-04-08 07:50:23 Attenuator state read from the device ready
2010-04-08 07:50:24 HOS Attenuator: passe dans attStateChanged
2010-04-08 07:50:24 HOS Attenuator: passe dans getAttState
2010-04-08 07:50:24 Attenuator state read from the device ready
2010-04-08 07:51:21 HOS Attenuator: passe dans getAttFactor
2010-04-08 07:51:22 HOS Attenuator: passe dans getAttFactor
2010-04-08 07:52:21 pssStatusOH: Tango.py : could not poll attribute pssStatusOH
2010-04-08 07:52:21 /TangoOptPss: TangoPss.valueChanged, None
2010-04-08 07:52:21 /TangoOptPss: TangoPss.getWagoState, ready
2010-04-08 07:52:31 pssStatusOH: restarting polling on attribute pssStatusOH
2010-04-08 07:56:08 HOS Attenuator: passe dans getAttFactor
2010-04-08 07:56:09 HOS Attenuator: passe dans getAttFactor

```



Machine current

402.3 mA

4/4 filling

Shift Lignes

Collect stage

1. Preparing beamline
2. Mounting sample
3. Centring sample
4. Taking snapshot
5. Collecting images
6. Unmounting sample

PSS Experimental Hutch

not ready

PSS Optical Hutch

ready

# Perspectives

Events problem: Solution in BlissFramework4 with Pyro

We have still a lot of work to do to integrate all the capabilities of mxCuBE and EDNA, ISPyB...

We and our users are pleased by the adoption of mxCuBE on PX1.

We are willing to collaborate on the development of future work on mxCuBE.