January-February 2011 Alba mini newsletter

Beamlines:
http://www.cells.es/Beamlines

* BL04-MSPD: Materials Science and Powder Diffraction.
- Vacuum conditioning is in progress.
- I_o monitor diode has been installed inside the monochromator.

* BL09-MISTRAL: X-Ray Microscopy.
- The commissioning of the beamline has been postponed until April.
- Last scan tests with the final cables of the monochromator are ongoing.

* BL11-NCD: Non-Crystalline Diffraction.
- Negotiations with four companies that offer the detectors for the beamline have been carried out. A final decision will be made in February.
- Vacuum and motion controllers for the optics of the beamline have been installed in their racks.
- Remaining parts for the compressed air, N_2, and water pipes have been installed.
- Cables have been installed for the optics.

* BL13-XALOC: Macromolecular Crystallography.
- The beam conditioning elements (collimator, x-ray beam position monitor, slits, fast shutter, and monochromatic beam attenuators) and their corresponding vacuum vessels have been installed on the diffractometer table.
- Metrology of the translation movements of the vertical focusing mirror has been carried out.
- Vibration studies of the Si crystal of the monochromator are being carried out in cryogenic conditions.

* BL22-CLÆSS: Core Level Absorption & Emission Spectroscopies.
- Internal cabling of the CLEAR spectrometer is ongoing.
- Optical metrology/calibration of the collimating mirror will start shortly.
- On-the-fly ray tracing software of the beamline has been implemented (see fig. 1).
For more information follow this link:
http://www.cells.es/static/Files/Experiments/CLAESS/pyXRayTracer/index.html

* BL24-CIRCE: Photoemission Spectroscopy and Microscopy.
- Vacuum vessel and mechanism of the Kirkpatrick-Baez (KB) system have been received.

* BL29-BOREAS: Resonant Absorption and Scattering.
- Cabling and local fluids installation are almost finished.
- The contract to manufacture the high T_c magnet for the scattering station has been awarded.
- The ultra high vacuum vessel of the KB system has been installed (without the mirrors).

IDs:
http://www.cells.es/Divisions/Accelerators/Insertion_Devices/Ids/

- The second in-vacuum undulator arrived at ALBA on January 20th. With this reception, all the insertion devices (IDs) of the first-phase beamlines have been received.

- Installation of IDs into the Storage Ring started in January. The first inserted ID was the EU71 Apple-II type undulator, which will feed the BL29-BOREAS beamline. This installation included the installation of the final vacuum chamber made of extruded aluminium, with an external thickness of 10 mm.

Accelerators:
http://www.cells.es/Divisions/Accelerators

- The approval from the Nuclear Safety Council (CSN) to start injecting into the storage ring (SR) has not yet been issued. In order to use the time effectively, we have installed the following insertion devices: the Multipole Wiggler (MPW80) and the 2 APPLE-II Undulators (see fig. 2). The installation included the replacement of the dummy chamber by the final 8 mm narrow gap vacuum chamber. These vacuum chambers are made of aluminium and are NEG coated.

- The booster (BO) will start running on February 8th, as the installation and the running of the BO cannot take place simultaneously and priority has been given to the ID installation.

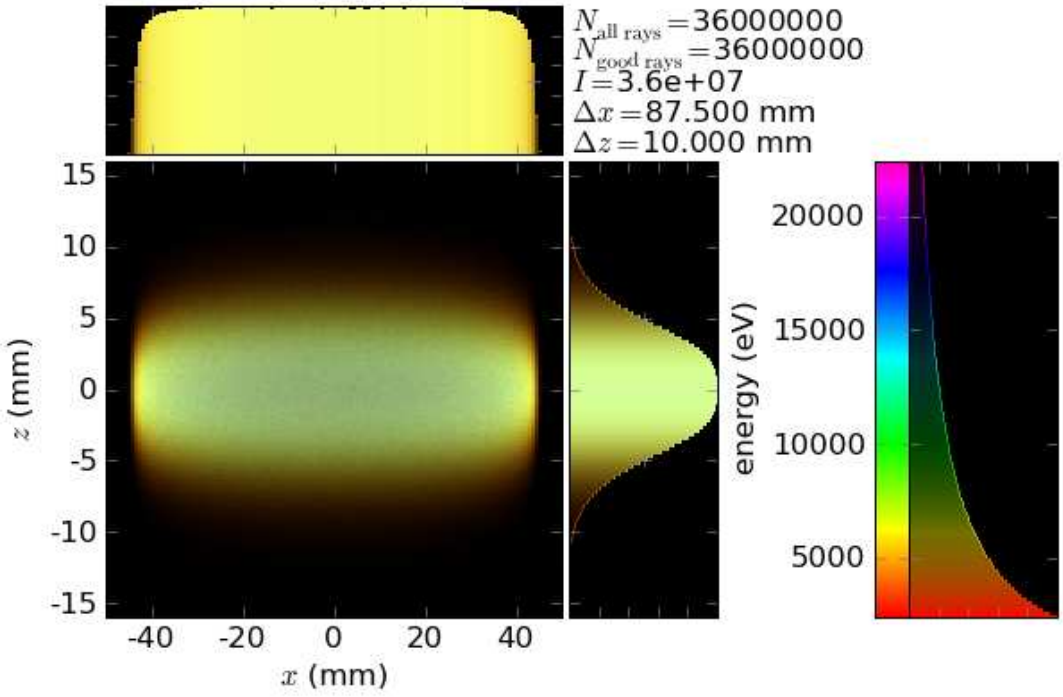

Figure 1. Ray-traced image of wiggler radiation (see BL22-CLÆSS for more information).

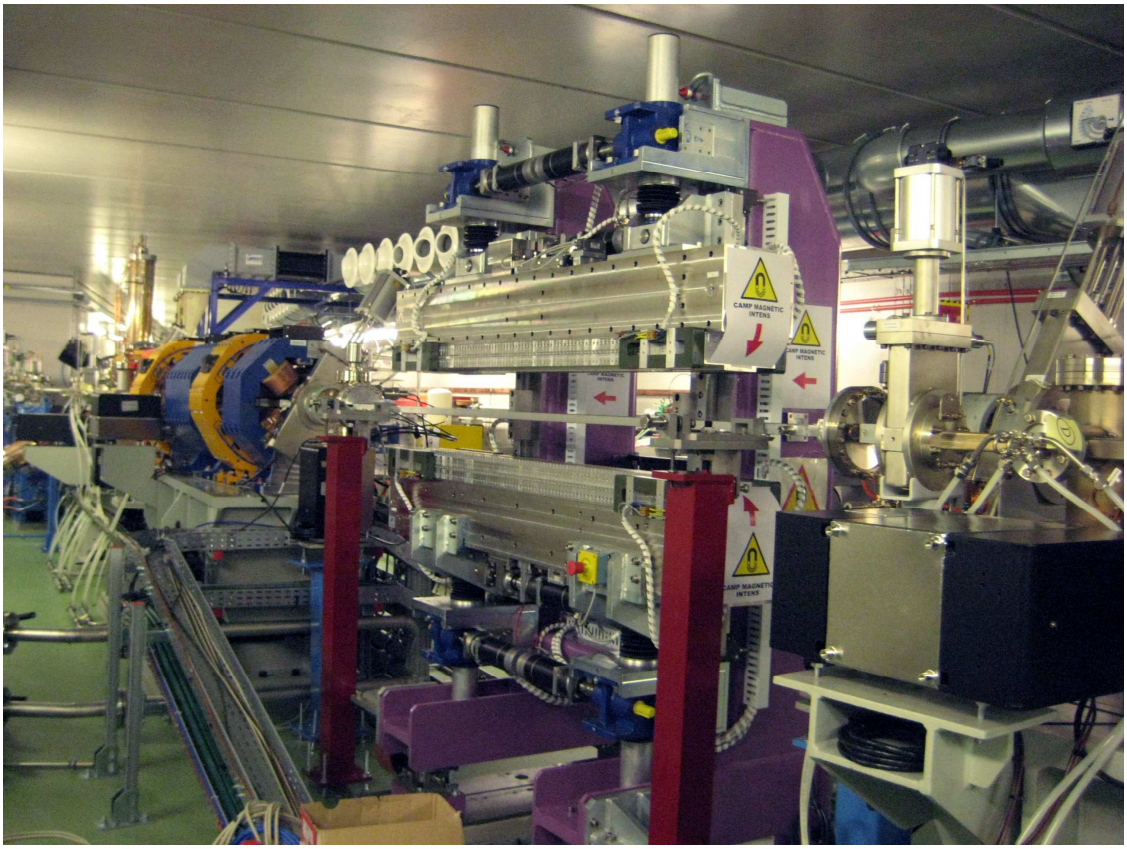

Figure 2. This picture shows the first Insertion Device installed in the ALBA Storage Ring. It is an APPLE-II Undulator, with a period of 71 mm which will give light to BL29-BOREAS.