Contribution ID: **8** Type: **not specified**

Some Design Considerations for the ESRF Upgrade Program Experimental Hall Slab

Thursday 16 September 2010 11:30 (20 minutes)

In 2008, the Council of the European Synchrotron Radiation Facility (ESRF) launched the ESRF Upgrade Programme 2009-2018, an ambitious ten-year project serving a community of more than 10,000 scientists. Funding for the first phase of the Upgrade (from 2009 to 2015) has been secured to deliver:
- eight new beamlines with capabilities unique in the world;
- refurbishment of many existing beamlines to maintain them at world-class level;
- continued world leadership for X-ray beam availability, stability and brilliance; and,
- major new developments in synchrotron radiation instrumentation.

One of the key elements of the Upgrade Program is to produce nano-sized beams. This will require the construction 120 m and in some cases even 250 m long beamlines. A combination of extended experimental hall and satellite buildings will address this need.

One particularly important consideration is the design of the concrete slab that will host these new beamlines. The vibrational stability of the experimental hall slab is a key aspect to in the slab design. However, recent hydrostatic levelling system (HLS) measurements indicate that slab bending movements driven by temperature gradient variations through the slab could be an equally important consideration in beamline stability and performance. This paper will present the measurements and simulations that have led to this conclusion.

Primary author: Dr MARTIN, David (ESRF)

Presenter: Dr MARTIN, David (ESRF)

Session Classification: D4, S2, Long Term Monitoring, Ground Motion, Vibration

Track Classification: ground motion, long term monitoring, vibration