



Contribution ID: 13

Type: **not specified**

The SINGLE-electron experiment in the ESRF Storage Ring and future developments to improve bunch pollution measurements

Tuesday 7 June 2022 12:00 (30 minutes)

The control and measurement of a Single-electron have been achieved at the ESRF with the combined use of a low-cost photon detector and the extracted visible-light from bending magnet beam-port. We present both the details of the very particular control of our injector allowing this injection of individual electrons, and the set-up and technique of irrefutably measuring these levels of 1-2-3-4-etc. electrons in a very reasonable measurement time of a few minutes. This device is now operational for specific accelerator studies to measure the level (or rather the total absence) of any unwanted electrons when fine-tuning the so-called cleaning system in the Booster-Injector-Ring. This work will continue with use of TCPC techniques to improve our diagnostics, and then also during user-mode, of measuring pollution in these specific ESRF filling patterns, where X-ray users demand such impurities as low as zero electron.

Primary author: Dr BURATIN, Elena (ESRF)

Presenter: Dr BURATIN, Elena (ESRF)

Session Classification: Tuesday morning