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LSST broker systems and follow-up strategy

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The next decade will see the arrival of a new generation of instruments with a large increase of data flux at the 2020 horizon, and beyond. Among these, LSST will provide a unique information in the visible band and it will have the opportunity to perform deep follow-up of events detected by gravitational wave detectors. While LSST strategy for photometric follow-up of gravitational wave alerts is not yet fully determined, I will describe the main efforts carried on by the LSST community.

In a second part, I will focus on the LSST broker ecosystem whose main challenges are to process the large volume of data expected from LSST, correlate alerts from different telescopes (real-time and post-processing), extract the sources, and efficiently trigger repointing of LSST and other telescopes. A collaboration centred on several IN2P3 laboratories and led by LSST France is developing such a broker with a large part of the project dedicated to the multi-messenger astronomy. A close collaboration between the IN2P3 gravitational wave community and this effort is a unique opportunity to create a synergy that will enable an efficient cross-correlation and characterization of alerts, maximizing the scientific return on both LSST and collaborating experiments.

Orateur: PELOTON, Julien (CNRS-LAL)

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