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The ELAsTiCC data challenge: preparing the Fink broker for LSST

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Fink is a community alert broker specifically designed to operate under the extreme data volume and complexity of the upcoming Vera C. Rubin Observatory Legacy Survey of Space and Time (LSST). It is a French-led international collaboration whose task is to select, add value and redistribute transient alerts to the astronomical community during the 10 years of LSST. The system is completely operational and currently processes alerts from the Zwicky Transient Facility (ZTF), considered a precursor of LSST. Nevertheless, there are still important differences between the two surveys in terms of data format and complexity. In order to simulate the interaction between broker systems and an LSST-like alert stream, the Extended LSST Astronomical Timeseries Classification Challenge (ELAsTiCC) is being organized. In this talk, I will describe the challenge, its goals and the efforts by different groups within Fink to develop machine learning classification algorithms accurate and scalable to large data volumes. I will also describe how this experience helped shape our confidence in the Fink system and the resilience of its international community, which has developed modules/filters to search for supernovae, fast transients, microlensing, AGNs, anomaly detection and multi-class deep learning classifiers.

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