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Anomaly detection in Fink

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The detection of new astronomical sources is one of the most anticipated outcomes of the next generation of large-scale sky surveys. Experiments such as the Vera Rubin Observatory Legacy Survey of Space and Time are expected to continuously monitor large areas of the sky with remarkable deliberation, which will undoubtedly lead to the detection of unforeseen astrophysical phenomena. At the same time, the volume of data gathered every night will also increase to unprecedented levels, rendering serendipitous discoveries unlikely. In the era of big data, most detected sources will never be visually inspected, and the use of automated algorithms is unavoidable. I would like to present the anomaly detection module developed for the Fink community broker –one of the official LSST brokers –to search for unusual astrophysical events in the Zwicky Transient Facility alert stream and LSST in future. I will talk about the recent updates on the module and present the most recent discoveries. The further plans on incorporating the active anomaly detection algorithms will be discussed.

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