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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 broker to search for unusual astrophysical events in the Zwicky Transient Facility alert stream. I will present the first discoveries made with the module including AT2023awt –rare subtype of AM CVn variables. The spectral and photometric follow-up observations of AT2023awt will be discussed. I will also talk about the Fink anomaly Slack- and Telegram-bot, which makes the process of anomalies analysis to be more efficient and convenient for the user.

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