ID de Contribution: **5**   Type: **Non spécifié**

Hostless transients detection in Fink

jeudi 17 juillet 2025 09:30 (30 minutes)

Hostless transients refer to transients for which we cannot find an associated host galaxy. This could happen for the following possible reasons: 1. Mostly due to the limitations of telescopes, we are unable to detect the associated host; 2. In very rare cases, supernovae have escaped their hosts due to dynamical ejection, tidal stripping or other astrophysical phenomena. Such candidates are interesting for many reasons such as: to understand why some transients occur in very faint galaxies or to find new low surface brightness galaxies. We developed and integrated a statistical pipeline for ZTF alerts in Fink broker that detects potential hostless transients. By applying image processing and frequency domain analysis to ZTF science and template alert stamps, our pipeline (ELEPHANT) is discovering interesting potential hostless transients. ~19% of the reported transients on our Fink Telegram bot from April 2024 to March 2025 have spectroscopic classification on the Transient Name Server portal.

Moving forward, we aim to update and integrate the methodology for the Vera C. Rubin Observatory data in Fink broker. Since the LSST can produce up to 10 million alerts each night, it would be beneficial to have a real-time pipeline that can flag potential hostless transients. Our pipeline is independent of other catalogues, operates solely on stamp images and can process alerts at a faster rate. Therefore, it would be an ideal tool for the LSST to create a potential hostless transients catalogue.

Author: M. DURGESH, Rupesh (COIN)

Orateur: M. DURGESH, Rupesh (COIN)

Classification de Session: Science