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Astro Colibri

Content

Flares of known stable astronomical sources and transient sources can occur on different timescales, from only a few seconds to several days. The discovery potential of both serendipitous observations and multi-messenger and multi-wavelength follow-up observations could be maximized with a tool which allows for quickly acquiring an overview over both stable sources and transient events in the relevant phase space. We here present COincidence LIBrary for Real-time Inquiry (Astro-COLIBRI), a comprehensive tool for this task. Astro-COLIBRI's architecture comprises a RESTful API, a real-time database, a cloud-based alert system and a website. Users will also have the opportunities to use it on an apps for both iOS and Android. The structure of Astro-COLIBRI is optimized in terms of performance and exploits concepts such as multi-index database queries, a global content delivery network (CDN), direct data streams from the database to the clients and caching.

Astro-COLIBRI evaluates incoming VOEvent messages of astronomical observations in real time, stores them in the database and filters them by user specified criteria in the context of known sources from various catalogs. The clients provide a graphical representation with a summary of the relevant data to allow for the fast identification of changes in observed sky regions, and for analyses of those. In this contribution, the key features of Astro-COLIBRI are presented including the architecture and the resources providing data to the Back-End . The current implementation of Astro-COLIBRI will be illustrated with use cases in multi-messenger astrophysics

Preferred talk time

morning of UTC+2

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