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**Exploring the transient Universe in the multi-messenger era: Planning, Assessment and Observation** 

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**Introduction**

We present a new application to enable the efficient computation of sky regions and the visibility of these regions in the cases where astrophysical sources may be localized in relatively large sky regions, and the planning cannot be done point by point.

This occurs quite frequently in the transient multimessenger astronomy with gravitational-wave sky

**Multi Order Coverage (MOC)**

The **MOC** (Multi Order Coverage) encoding method was originally developed at the Centre de Données astronomiques de Strasbourg (CDS) and has been

**Application: GW170817/GRB170817/AT2017gfo**

**Planning**

We apply the method to identify observable sky zone in a MOC map in the context of the low-latency gravitational-wave alert of GW190425. The event represents the discovery of a second binary neutron star merger after GW170817. The GW190425 signal has been

**Assessment**

The scheduling of observational follow-up programs requires many considerations to be taken into account. The primary consideration is the choice of the sky fields which is determined by the credible regions.

**Observation**

Haleakala Observatories      Paranal Observatory (ESO)      Siding Spring Observatory

**References**

1. B. P. Abbott, R. Abbott, T. D. Abbott, et al., GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral, Phys. Rev. Lett. 119 (2017) 161101. doi:10.1103/PhysRevLett.119.161101. URL <https://link.aps.org/doi/10.1103/PhysRevLett.119.161101>.

**ET Observatory**

The Einstein Telescope (ET) is a proposed underground infrastructure to host a third-generation, gravitational-wave observatory. It builds on the success of current, second-generation laser-interferometric detectors Advanced Virgo and Advanced LIGO, whose breakthrough discoveries of merging black holes (BHs) and neutron stars

**Acknowledgem...**

The research leading to these