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Multimessenger follow-up of the gravitational wave event GW150914 with ANTARES

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On September 14th 2015, LIGO/Virgo collaboration has detected the first significant gravitational wave event. A neutrino follow-up was performed using ANTARES and IceCube online data to search for a potential neutrino counterpart to this event. No neutrino candidate in both temporal and spatial coincidence with GW 150914 had been detected within ± 500 s from the event. Consequently, the neutrino fluence and the total energy emitted in neutrinos have been constrained. This first joint study does demonstrate the multimessenger synergies between ANTARES, IceCube and LIGO/Virgo. More generally, by constantly monitoring at least one complete hemisphere of the sky, neutrino telescopes are well designed to detect neutrinos emitted by transient astrophysical sources. Searches for ANTARES neutrino candidates coincident with multi-wavelength astrophysical transient phenomena are performed by triggering optical, X-ray and radio observations immediately after the detection of an interesting event. The latest results of these analysis will be presented.

Presenter: Dr COLEIRO, Alexis (APC / University Paris Diderot)

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