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Perspectives for detection of gamma-ray counterparts of gravitational wave sources

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The detection of the first gravitational waves from GW150914 by the LIGO-Virgo collaboration has triggered many multi-wavelength campaigns using space and ground observatories. Large field-of-view gamma-ray telescopes, such as those onboard INTEGRAL have the capability of detecting relatively faint transient events (\sim a few 10^{-8} erg cm^{-2}) and are unique for the study of the prompt emission. We report on the upper limits of the total energy emitted by GW150914 obtained with INTEGRAL and compare them with the results obtained with Fermi/GBM. We then discuss the perspectives for INTEGRAL to provide measurements during the forthcoming LIGO-Virgo campaigns. The INTEGRAL instruments have the capability to characterize the prompt and also the delayed emission using dedicated TOO programs. Moreover, counterpart searches will not be limited to GW events but will be also extended to cosmic particle detections such as neutrinos or ultra high energy cosmic-rays.

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