

X-ray counterparts of gravitational waves

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The discovery of the joint GRB/GW 170817 events opened a new window into the multi-messenger astronomy. The Advanced gravitational wave detectors of second and third generation will observe larger and larger volume of the Universe. While the current optical surveys will suffer of the faint kilonova emission and many contaminants within the gravitational-wave poor sky-localization, and the gamma-rays of rare detectable events, the X-ray band could play a key role for joint detections. The future wide-field X-rays missions are expected to detect these sources while the usual GRB prompt emission would be most probably missing. I will present the advantages of the X-ray domain for the potential increase of the number of GW-GRB associations with respect to the gamma-rays. I will discuss several classes of soft X-ray counterparts expected from the prompt and the afterglow phases for off-axis observers, and robust observational strategies to detect them.

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