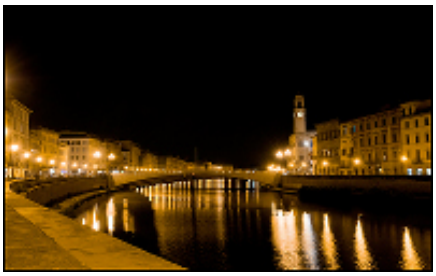

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How Polarimetry will complete the role of X-rays as e.m. messenger of High Energy phenomena

Friday, 21 October 2016 16:10 (25 minutes)

X-rays have been for half a century one of the messengers driving the study of High Energy Phenomena. Our knowledge and understanding of these is in a phase of fast evolution, thanks to the outstanding crops of data from High Energy and Very High Energy Gamma-Rays, the systematic increase data from UHE CR and neutrinos and to the sudden show-up of the gravitational wave phenomena. But X-rays can still play a fundamental role because they are the highest energy where a high angular resolution, a high energy resolution and a high timing capability can be achieved. For sure, beside what they report by themselves, in a multi-messenger approach, will have for long time a privileged role in correlating the dramatic phenomena detected in other bands with the objects studied by astrophysics.
The instrumentation for X-ray imaging, spectroscopy and timing has arrived a high level of sophistication and will further improve with the new planned or proposed missions. It seems that, at last, good chances are there that also polarimetry, namely the missing subtopic of X-ray astronomy, will be exploited in the next decade so opening this undisclosed window in sky.
I show the status of instrumentation, the concept of missions and how we can realistically expect to study up to 100-200 sources, belonging to most of classes of X-ray astronomy, with a sensitivity of relevant interest according to a theoretical literature that, fed by the expectation of these new data, is systematically growing in the last years. A few topic cases are discussed.

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