ID contributo: **80** Tipo: **Oral presentation**

Recent highlights from H.E.S.S.

martedì 13 settembre 2022 09:00 (20 minuti)

Stereoscopic observations with the High Energy Stereoscopic System (H.E.S.S.) started 20 years ago. Installed at a pristine site in the Khomas highland of Namibia, H.E.S.S. is providing unprecedented observations of the very-high-energy gamma-ray sky in the Southern hemisphere. The early phase of the experiment was largely dedicated to a deep scan of the Galactic Plan, revealing a surprisingly large and rich population of TeV emitters. Observations of variable and flaring sources led to detections of enormous flares of extragalactic sources like PKS 2155-304. The importance of the program dedicated to transient phenomena has been further underlined in 2012 by the installation of a 28m telescope, the largest optical telescope in the world, in the center of the original array of four 12m telescopes. It allowed to lower the energy threshold and reduced the reaction time to external multi-wavelength and multi-messenger alerts. Dedicated software developments like a fully automatic alert system and a real-time analysis of the incoming data streams further improved the capabilities of the experiment, enabling several breakthrough discoveries over the last years.

Focussing on time domain astronomy and multi-messenger connections, I will discuss the latest highlights of the H.E.S.S. experiment. I will present current state-of-the-art target-of-opportunity observations searching for high-energy gamma-ray emission from a variety of sources including gamma-ray bursts, Galactic novae, gravitational waves, and high-energy neutrinos.

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