Studying young massive stellar clusters at VHE: current status and prospects

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In recent years, Young massive stellar clusters (YMSCs) have been identified as Galactic CR factories. In clusters younger than 3 Myr, stellar winds are expected to drive CR acceleration through different mechanisms, such as acceleration at the collective cluster wind termination shocks (WTS). Understanding the contribution of YMSC and stellar winds to the production of Galactic CRs is currently one of the hottest topics of highenergy astrophysics. Theoretical models and recent gamma-ray observations demonstrated that at least in a few extreme YMSCs (e.g. Cygnus OB2, Westerlund 1, 30 Dor C), CRs can be accelerated up to PeV energies. However, most of YMSCs (with masses between $10^3 - 10^4$ MSun) are believed to accelerate particles below hundreds of TeV and to show a cutoff in their gamma-ray spectrum between hundreds of GeV and tens of TeV. In this energy range, LST1, MAGIC and the upcoming LST-subarray can play a crucial role. This contribution will give an overview of the current status of the observation of YMSCs at Very High Energy (VHE). Prospects for LST-1, MAGIC and the CTAO Northern array will be outlined.

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