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## TeV gamma ray astronomy with ground-based shower array detectors

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The TeV energy band is a very exciting window into the origin of high energy cosmic radiation, particle acceleration, and the annihilation of dark matter particles. Above a few hundred GeV, ground-based experiments of very large effective areas open a new domain to study extragalactic sources at intermediate redshifts, galaxy clusters, gamma ray bursts, AGN and their flaring states, extended sources and galactic diffuse emission, and to indirect searches for dark matter. In particular, ground arrays of particle detectors –that operate with high duty cycles and large fields of view–can extend to multi-TeV energies the measurements made with experiments on satellites, and complement the observations done with air Cherenkov telescopes on the ground. Key science goals of ground arrays include performing unbiased all-sky surveys, monitoring of transient events from known (and unknown!) sources, and detecting extended regions of diffuse emission. In this talk, I will describe the capabilities and limitations of ground arrays for TeV  $\gamma$  ray astronomy, and present the status and latest results from the leading experiments, including Tibet AS $\gamma$ , ARGO-YBJ, HAWC, and LHAASO.

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