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Photon searches with the Pierre Auger Observatory and the connection to TeV gamma-ray observations

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The Pierre Auger Observatory, located in Argentina, provides an unprecedented integrated aperture for the search of photons with energy above 100 PeV. In this contribution recent results are presented with a focus on directional searches for photon point sources. The derived limits are of considerable astrophysical interest: Diffuse limits place severe constraints on top-down models and start to touch the predicted GZK photon flux range while directional limits can exclude the continuation of the electromagnetic flux from measured TeV sources with a significance of more than 5σ and set upper limits on the maximum cutoff energy of the source. By taking into account multi-wavelength information the sensitivity can be further increased.

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