

## Executive summary for “The Ultra-High-Energy Source MGRO J1908+06”

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This talk will discuss the spectrum and morphology of the ultra-high-energy gamma-ray source MGRO J1908+06, which has recently been shown to emit past 200 TeV. The presentation uses data from the High Altitude Water Cherenkov (HAWC) Observatory, a TeV gamma-ray experiment located in Puebla, Mexico.

The source spectra exhibits curvature in the TeV range, with the best-fit spectral shape being a log-parabola. The morphology is angularly extended and best-fit to a diffusion model. There is also evidence that the morphology is energy-dependent, with the extent shrinking as a function of energy. Peculiarly, there may be hints that the spectrum hardens at the highest energies, although this effect is not presently significant.

We use the HAWC data along with available multi-wavelength data in the X-ray and GeV bands to model possible emission mechanisms. One-population models do not fit the data well. The bulk of emission appears to be leptonic, possibly powered by the nearby radio-quiet PSR J1907+0602. However, a second component is needed to fit the highest-energy emission. This component can be either leptonic or hadronic in origin. This has implications for detection probabilities by multi-messenger experiments, such as IceCube. More data at the highest energies by experiments such as LHAASO would also aid in deciphering emission mechanisms.