Among all the high-energy environments of our Galaxy, the Galactic Center (GC) region is definitely the richest. It harbors a large amount of non-thermal emitters, including the closest supermassive black hole, dense molecular clouds, regions with strong star forming activity, multiple supernova remnants and pulsar wind nebulae, arc-like radio structures, as well as the base of what may be large-scale Galactic outflows, possibly related to the Fermi Bubbles. It also contains a strong diffuse TeV gamma-ray emission along the Galactic ridge, with a disputed origin, including the presence of a possible Pevatron, unresolved sources, and an increased relevance of the diffuse sea of cosmic rays. This very rich region will be one of the key targets for the next generation ground-based observatory for gamma-ray astronomy, the Cherenkov Telescope Array (CTA). Here we review the CTA science case for the study of the GC region, and present the planned survey strategy. These observations are simulated and we assess CTA’s potential to better characterize the origin and nature of a selection of gamma-ray sources in the region.
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