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The populations of Pulsar Wind Nebulae and Supernova Remnants observed by H.E.S.S.

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The H.E.S.S. Galactic Plane Survey (HGPS) provides the most comprehensive view to date of the inner Milky Way in TeV gamma-rays. Of the sources detected, 40% can be firmly identified, mostly as pulsar wind nebulae (PWNe) or supernova remnants (SNRs). The uniform analysis of the HGPS allows systematic studies of the populations of these two classes of TeV-emitting objects.

The population of detected PWNe exhibits a good correlation of TeV gamma-ray surface brightness with pulsar spin-down power, which can be explained by the combination of a weaker trend of decreasing TeV luminosity and increasing extension with age. Large offsets of the PWN center with respect to the pulsar are seen for objects older than about 10 kyr. In addition to the firmly identified PWNe, we find that 10 additional sources are plausible PWN candidates.

Several TeV sources identified as SNRs have a shell-type morphology. The HGPS allowed the discovery of three new sources with this morphology, one with a radio counterpart and two SNR candidates. The TeV properties of these SNRs and SNR candidates will be reviewed. A population study including upper limits on undetected SNRs allows conclusions on the particle acceleration efficiency and gamma-ray production in these objects.

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