"The H.E.S.S. Galactic Plane Survey, Cosmic-ray PeVatrons, and Atmospheric Studies."

The H.E.S.S. Galactic Plane Survey was a decade-long observation program carried out by the H.E.S.S. I array of Cherenkov telescopes in Namibia from 2004 to 2013. I will present the results from this first comprehensive survey of the Galactic plane in very-high-energy (0.1 < E < 100 TeV) gamma rays, including a sneak preview of the final TeV maps and standardized source catalog to be publicly released in 2015. The majority of the Galactic TeV source population is found to be made up of pulsar wind nebulae or supernova remnants, while a large fraction still remains unidentified. A selection of these discrete sources will be highlighted, along with the diffuse gamma-ray emission detected, in the context of the search for Galactic cosmic rays. The Cherenkov observation technique itself will also be briefly reviewed, with a focus on on-going efforts for integrated atmospheric monitoring and calibration. Finally, I will close with some preliminary results from the upgraded H.E.S.S. II array and prospects for the next-generation Galactic Plane Survey to be carried out by the forthcoming Cherenkov Telescope Array (CTA).

Ryan C. G. Chaves, CNRS Laboratoire Univers et Particules de Montpellier (CNRS LUPM)