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## ATLAS Collaboration: astronomical and cosmological significance

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**Abstract content** &nbsp; (Max 300 words) <br> <a href="http://events.saip.org.za/getFile.py/?target=\_blank">Formatting & Special chars</a>

There is a strong overlap between some important questions usually posed in the context of either Particle Physics or Astroparticle physics, or even more generally, Astrophysics and Cosmology. Examples are questions like the nature of mass, the nature of dark matter, the nature of dark energy, the stability of protons, the nature of primordial matter, the symmetry between matter and anti-matter, the properties of neutrinos, the quantization of gravity and the existence of large extra dimensions. In general, this is physics beyond the Standard Model. As the most powerful collider currently, the Large Hadron Collider (LHC) offers a unique opportunity to test the well-established Standard Model (SM), and more importantly, to possibly discover and then study in detail, new physics at the TeV scale. The connection to astronomy and cosmology has materialised as a major imperative shaping the motivation for accelerator-based searches for new physics. There are excellent opportunities for students in either Particle or Astroparticle Physics in South Africa. To highlight the synergy, this contribution reviews the complimentary and redundant measurements that are possible at the LHC, and focuses on some of the current public results.

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