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The MARTA Project in AugerPrime: RPCs to detect muons in the Pampa

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The Pierre Auger Observatory aims to answer several questions about the energy, nature, and origin of ultrahigh energy cosmic rays. It also aims at understanding the physics governing the interactions of such cosmic rays with matter present in the atmosphere by studying the physics governing the cascade processes involved. For these studies, identifying the muon content of the air showers created in the atmosphere is of the utmost importance. In a partnership between Portugal and Brazil, we are building a small array of MARTA stations. Each station includes RPCs produced in Portugal and Brazil to detect charged particles. We will address the design and the most relevant detector features that will improve the accuracy of the muon measurement in air showers.

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