The Physics of the Very Small Using a Very Large Machine RISHI-RAJ PRAVAHAN, University of Texas at Arlington, ATLAS COLLABORATION

— Very soon the largest particle collider ever built will be operational producing an energy density to mimic the conditions of the big-bang. It is a common consensus among particle physicists today that our current knowledge of physics is not complete, and the Large Hadron Collider will produce ‘new physics’. To detect and understand this new physics the detector named ATLAS has been built by a large collaboration of institutions, University of Texas at Arlington being one of them. This talk concerns my involvement with the ATLAS detector and the possibilities of discovering Super-Symmetry through Monte-Carlo studies and methods to analyze the data that is collected in the first year of collisions. The goal is to explore and discover the unknown and push the frontiers of our understanding of the universe.

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