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Heavy Ion Collision Analyses Using RIVET[1] CHRISTAL MARTIN, CHRISTINE NATTRASS, University of Tennessee, Knoxville — When heavy ions collide at ultra-relativistic speeds, a hot, dense state of nuclear matter known as Quark-Gluon Plasma (QGP) is formed. To study the properties of the QGP, data are collected from heavy ion collisions at the Large Hadron Collider (LHC) in Switzerland and the Relativistic Heavy Ion Collider (RHIC) in New York. Experimental analyses using this collected data can be studied using a Monte Carlo (MC) validation software called Robust Independent Validation of Experiment and Theory (RIVET) to make comparisons between experimental data and MC models. Heavy ion analyses are being developed for use by the JETSCAPE collaboration. We discuss procedures to create heavy ion collision analyses using RIVET. We also demonstrate how to incorporate these procedures and analyses into an academic research course.

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