

Abstract Submitted
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Mathematically Modeling Accretion Discs around a Black Hole

NICOLE SABBATINO, REBECCA SURMAN, Union College — A gamma ray burst is thought to occur when a massive, rotating star collapses on itself, and the energy released forms jets of very energetic photons. The outer layers of the collapsed star can form an accretion disc while the center forms a black hole. In order to understand this system fully, we must first gain an in depth understanding of the disc itself. We recalculate current accretion disc models to allow the exploration of a larger parameter space than currently available. We also investigate how the changing nuclear composition in the disc influences the disc's structure. The ultimate goal is to use this disc model to calculate the nucleosynthesis in the disc and in the outflows.

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