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# Simulating Blast Wave Scenarios in Astrophysical Phenomena and Multiwavelength Analysis of Threads in ESO 137-006 Galaxy

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## Abstract

Shockwave generation in Supernova explosions or in Active Galactic Nuclei (AGN) various jet activities or in gamma ray bursts are common phenomena and the shockfront originates from the central galaxy and moving orthogonal to the plane of the galaxy. As time evolves depending on the velocity of the shock, input energy and ambient medium density it retains its shape and forms gigantic bubbles, similar to ones seen in our own Milky Way galaxy. For AGN it forms a cocoon with the plasma material due to the forward and sideways velocity of jet propagation. We try to simulate the shape of the shockfront from various initial surfaces over the timescale of millions of years. Eventually this bubble in AGN could form filaments or threads visible in different clusters. We explore this for a Radio galaxy where threads are connected with the radio lobes and have performed its associated multiwavelength analysis. The simulation and analysis results will be discussed in detail in the poster.