Anisotropies in core-collapse supernova explosions



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Investigating the effects of the inhomogeneous interstellar medium in shaping the morphology of SNR IC 443

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The morphology and the distribution of material observed in SNRs reflect both the interaction of the SN blast wave with the ambient environment, and the physical processes associated to the SN explosion and the internal structure of the progenitor star. IC443 is a SNR located in a quite complex environment: it interacts with a molecular cloud in the northwestern and southeastern areas and with an atomic cloud in the northeast. In this study we aim at investigating the effects of the inhomogeneous medium in shaping the morphology of IC 443 after the SN explosion. To this end, we have developed a 3D HD model for IC 443 describing the interaction of the SNR with the environment, parametrized in agreement with the results of the multiwavelength data analysis. From the simulations, we synthesized the X-ray emission and compared with XMM-Newton observations. Here we present our preliminary results.