The University of Texas at San Antonio

UTSA Physics and Astronomy


## *Dr. Sangwook Park*

*University of Texas Arlington*


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# X-Ray Kinematics Study of Supernova Remnants


Supernova remnants (SNRs) are an excellent laboratory to study many fundamental subjects of modern astronomy and astrophysics such as stellar evolution, explosion, interstellar structure, and cosmic-ray acceleration. Realizing the 3-dimensional structure of supernova explosions is critical to correctly understand their nature. Based on the high resolution grating spectroscopy of Chandra X-ray Observatory, we can perform X-ray kinematic studies of metal-rich stellar debris of such explosions to study their 3-D nature. We briefly discuss a few examples of kinematic studies of young SNRs 1987A, Cassiopeia A, and G292.0+1.8. We also introduce our new on-going Chandra programs of supernova ejecta kinematics in Kepler's and Tycho's SNRs, the remains of two prominent historical supernova explosions observed in 1604 and 1572, respectively.



**Department Contact Information**
Veronica Castellanos
Veronica.Castellanos@utsa.edu
utsa.edu/physics