

Modelling Spatial and Temporal Emission Properties of the Young Pulsar Wind Nebula Kes 75

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What is this contribution about?

This contribution describes our spatial and temporal modelling of the young pulsar wind nebula (PWN) Kes 75, which has been detected in various wavebands.

Why is it relevant / interesting?

New spatial X-ray data is being exploited, in addition to broadband spectral data, to constrain model parameters and probe the nebular environment.

What have we done?

We apply a spherically symmetric, multi-zone, spatio-temporal PWN model to the morphological and spectral data over several epochs, and find reasonable fits to: (i) the broadband radiation spectrum, (ii) X-ray surface brightness profile, (iii) photon spectral index in the X-ray energy range and (iv) the expansion rate vs. time.

What is the result?

Our initial spectral and morphological fitting constrains certain model parameters, and future model application may aid in clarifying the nature of the gamma-ray emission from this source.