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Observational Connection of Radio Emissions from Pulsars with Their X-ray Properties

Pulsars are fast-rotating and strongly magnetized neutron stars. They emit radio waves in an intense, narrow beam that sweeps across the observer. However, their radiation mechanisms have remained mysterious. This study presents the observational connection of radio emission from X-ray-emitting pulsars with their X-ray spectral properties. We found that pulsars'radio luminosity is tightly correlated with their temperature. We also show that the group of pulsars with high temperatures shows a different trend from those with lower temperatures. Analyzing their radio emission may reveal differences between pulsars with different X-ray emission properties and give a better idea of their emission mechanisms.

Section

High Energy

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