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INTERACTION OF THE RELATIVISTIC JET AND THE NARROW-LINE REGION OF PMN J0948+0022

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In the study of active galactic nuclei (AGN), some sources have been extensively observed across various epochs and wavelengths. PMN J0948+0022 is one such source, displaying significant multiwavelength variability that has provided valuable insights into AGN structure and contributed to our understanding of this entire class. Initially, PMN J0948+0022 was classified as a jetted Narrow-Line Seyfert 1 (NLS1) galaxy. However, recent observations have revealed a different profile for the Hβ line, characteristic of Intermediate Seyfert galaxies (IS). After verifying the robustness of this profile change, we conducted a standard analysis of the SDSS, X-Shooter, and MUSE spectra of the source. Our analysis indicated a more significant variability in the narrow-line region (NLR) compared to the broad-line region (BLR), which we interpreted as an interaction between the NLR and the relativistic jet. These findings provide new insights into the changing-look AGN phenomena, illustrating how different AGN classes can be interconnected and enhancing our understanding of AGN evolution.