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| Book Name: | [**Current Research Progress in Physical Science**](https://www.bookpi.org/bookstore/product/current-research-progress-in-physical-science-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_4688** |
| Title of the Manuscript: | **X-ray Signatures of Core-Collapse Supernovae Type II** |
| Type of the Article | **Book Chapter** |

**Special note:**

**A research paper already published in a journal can be published as a Book Chapter in an expanded form with proper copyright approval.**

**Source Article:**

**This chapter is an extended version of the article published by the same author(s) in the following journal.**

**International Journal of Astronomy and Astrophysics, 14(3): 220-229, 2024.**

**DOI:** [**https://doi.org/10.4236/ijaa.2024.143014**](https://doi.org/10.4236/ijaa.2024.143014)

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | Author’s Feedback *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | **This manuscript provides valuable understanding of the X-ray emission mechanisms arising from supernova ejecta-circumstellar material (CSM) interactions, a critical area of study in astrophysics. By analyzing SN 2008ij, the study highlights the density distribution, shock dynamics, and radiation processes, which are essential for insights into the late-stage evolution of massive stars and their explosion mechanisms. The detailed spectral analysis, including the use of power-law, blackbody, and APEC models, offers a robust framework for interpreting X-ray data from similar supernovae. This work is therefore relevant and eye-catching for the astrophysics community.** |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | **Yes.** |  |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | **The abstract of this manuscript appears suitable for the study. However, the authors should carefully review the use of abbreviations. For instance, “CSM” is used before its full form (circumstellar material) is introduced. It is recommended to define abbreviations upon their first mention to ensure clarity and adherence to standard academic conventions.** |  |
| **Is the manuscript scientifically, correct? Please write here.** | **Yes.** |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | **Yes.** |  |
| Is the language/English quality of the article suitable for scholarly communications? | There are some issue with the texts. For example,   1. Page 4, Line 3: The parameter R is undefined. Please define or clarify what R represents in this context. 2. Page 5, Subsection “The Aftermath..”: The sentence is incomplete. The original sentence reads: “When the gas in the outer layers has cooled enough for hydrogen to recombine, the minimum occurs.” Please clarify what "the minimum" refers to (e.g., minimum temperature, luminosity, etc.). 3. Page 11, Line 1: The term tbabs is not explained. The original sentence reads: “For statistical analysis, Shehata et al. (2024) applied Cash statistics of Cash et al. (1979) and employed the tbabs absorption model.” Please provide a brief explanation of what tbabs refers to. 4. Figures 5, 6, 7: The various curves corresponding to different colors are not defined in the captions or text. Please add a legend or description to clarify what each color represents. 5. Table 3: The value 357 is unclear in the context of “C\_stat=310.45 (357)”. Please explain what 357 represents. 6. Table 4: The units for the “age” values are not specified. Please clarify the units used for the age measurements. 7. Page 16, Paragraph 1: The coordinates are not presented in their usual format, and the unit of T0 is missing. Please standardize the coordinate format and specify the unit for T0. |  |
| Optional/General comments | It would be beneficial if the authors could provide a detailed explanation of the mathematical form used for the fitting curves in Figures 5, 6, and 7. Further, clarifying the statistical methods used to fit the model to the observational dataset (e.g., least squares, maximum likelihood, etc.) would enhance the reproducibility and transparency of the analysis. |  |

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| **PART 2:** | | |
|  | Reviewer’s comment | Author’s comment *(if agreed with the reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in detail)* |  |

**Reviewer details:**

Darshan Kumar, China