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| Book Name: | **Current Research Progress in Physical Science** |
| 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**

PART 1: Comments

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|  | **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 for a book chapter provides informative insights into the X-ray signatures of Type II core- collapse supernovae. By first giving a systematic introduction of the classification of supernovae and details of the explosion mechanisms and aftermath, the chapter establishes a strong and attractive foundation for readers. The case study of SN 2008ij further strengthens the discussion by providing real evidence. However, a short summary paragraph at the end of the chapter is missing, and I would be even more appreciative if the author could realize this oversight. Although the English expression is quite informal, and many scientific expressions lack consistency, I hope that my comments will contribute to the further improvement of this manuscript. |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | There is a small grammatical issue with word order. "Type II" should come before "Core-Collapse Supernovae" because it serves as a descriptor. The correct one should be: "**X-ray Signatures of Type II Core-Collapse Supernovae**". This follows the conventional way of describing supernova classifications. |  |
| **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.** | 1. Please check if "CSM", "SN", "APEC" were defined on **first mention** in this abstract. Please note that usually one should avoid using so many abbreviation in the abstract part.
2. A small grammatic issue existing in the abstract: "*Significant details about the interactions between the supernova ejecta and the surrounding circumstellar material (CSM) ~~was~~ were obtained from the analysis of the X-ray emission from SN 2008ij.*"
3. Please change all number format to scientific notation such as "8.4 ± 0.3 × 1041 erg/s".
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| **Is the manuscript scientifically, correct? Please write here.** | Acceptable |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | Yes, but some recent reference can be added, as described in the section below. |  |
| **Is the language/English quality of the article suitable for scholarly communications?** | Although there are still a room to improve, overall it is understandable. |  |
| **Optional/General** comments | 1. Please change the word “brilliant" to "luminous" or an equivalent for a scientific precision. "*To put it simply, red stars require considerably greater diameters to generate the same amount of power as a hotter star because SN progenitors are extremely ~~brilliant~~ luminous.*"
2. Please change the term "ordinary stuff " or explain it in a more friendly way to the readers in the following sentence. "*However, this neutrino explosion is essentially invisible to us because of the limited interaction cross-section of neutrinos with ordinary stuff.*"
3. A reference for the following sentence is missing. "*SN 1987A is the only supernova from which neutrinos have been detected.*"
4. Please explain the term "minimum", to me it should be "maximum intensity" in the following two sentences: 1. "*About ten days after the initial burst, a minimum is reached, and then the luminosity rises once more.*" and 2. "*When the gas in the outer layers has cooled enough for hydrogen to recombine, the minimum occurs.*"
5. Change the word "vanish" to "fade" in the following sentence: "*Since expansion cools the gas, supernovae would vanish within months if the explosion's kinetic energy is the only energy source.*"
6. All "IIL"/"IIP" must change to "II-L"/"II-P" for consistency.
7. I recommend to add one reference to the following sentence: "On the other side, Type IIP SNe light curves have a distinctive plateau as a result of the emission being steady for months (Gong. 2024)." (GONG, T. H. One-year Photographic Light Curves of Supernova 2023ixf in Messier 101 from a Bortle Class 9 Sky. *Open European Journal on Variable Stars*, 252 (2024):1–8.)
8. No period after the subtitle: "**Features of the SN 2008ij.**"
9. Please change all number format to scientific notation such as "8.4 ± 0.3 × 1041 erg/s".
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PART 2:

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|  | **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:**

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