



**SDI Review Form 1.6**

Journal Name:	<a href="#">Physical Science International Journal</a>
Manuscript Number:	Ms_PSIJ_44683
Title of the Manuscript:	Plasmas Computed with ATMED CR of the 4 <sup>th</sup> Non-LTE Code Comparison Workshop Database
Type of the Article	<b>This should be filled in by the author, review, mini-review, original research article ?</b>

**General guideline for Peer Review process:**

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



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**PART 1: Review Comments**

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<b>Compulsory</b> REVISION comments	<p>1. Provide a descriptive title without acronyms;</p> <p>2. The first sentence in abstract is confusing, consider "This work presents results ... (The reference to the 4<sup>th</sup> workshop seems inappropriate, and it seems inappropriate in the title – this workshop occurred in 2005?</p> <p>3. Rephrase the second paragraph for correct use of English, include definition of all acronyms. Consider "Electron density and temperature are computed for local thermodynamic equilibrium (LTE) and for non-LTE cases. ..."</p> <p>4. Include units in Table 1, and in all other tables</p> <p>5. In figure caption for Figure 1a: label the 4 tables as (a) (b) (c) (d) and use Figure 1 instead, but expand the figure caption. Similarly, Figure 1b → Figure 2 with (a) and (b). Same changes for the other figures. Fig. 4(b) – why Fig. 7?</p> <p>6. Above Eq. (7), correct the sentence, but also indicate typical values used in Eq. (7)</p> <p>7. For high electron density, self-absorption may occur. This is in part addressed in Fig. 5.d or Fig. 5.e – please comment on the apparent, peaked structure</p> <p>8. In the summary and conclusion section, first paragraph needs to be rephrased, and equally, the last paragraph. Again, please establish a connection with 2005 results and current results.</p> <p>9. There needs to be some discussion of the results, moreover, the quality of the figures should be improved. And the graphs need to be represented in a consistent manner. Figure 5 a, for example, needs to show ordinate labelling.</p> <p>10. There need to be discussions of the results, e.g., Figure 5b: what is the significance of the variations of the mean ion charge?</p> <p>11. Figure 6 is really a table, and it is hard to read.</p> <p>12. In last sentence what is "so low a density" – low ?</p>	<p>1. Ok, title without acronyms.</p> <p>2. For not being confusing, consider that the purpose of the paper is to present good results computed of ATMED CR of plasmas proposed in this scientific meeting of 2005</p> <p>3. Ok, included all acronyms.</p> <p>4. Ok, included all units in tables</p> <p>5. Ok, I think now it is correct.</p> <p>6. Ok, I think now it is correct.</p> <p>7. For high electron density, self-absorption may occur. I've added a new section (2.6 Radiative Properties Analysis) for commenting on the apparent, peaked structure</p> <p>8. For not being confusing, consider that the purpose of the paper is to present good results computed of ATMED CR of plasmas proposed in this scientific meeting of 2005</p> <p>9. I put only some graphs as sample, but I have dozens. I'll send you the figures you want as independent files. Indicate them</p> <p>10. Figure 5b is for visualizing that there exists less data scatter of results of mean charge obtained by codes at NLTE-4 with significant improvement in agreement in respect of NLTE-1. In addition the values of ATMED CR are very good (4.673E+01) in comparison with experimental margins <math>49.3 \pm 0.5</math></p> <p>11. Eliminate Figure 6 if you want. Data of cases are displayed in tables of results.</p> <p>12. Ok, I put "Iron plasmas at low electronic density <math>10^7 \text{ cm}^{-3}</math> can't be managed with ATMED CR".</p>
<b>Minor</b> REVISION comments	<p>1. Avoid "regime" in favour of "region"</p> <p>2. Can you comment on the various results for carbon plasma? Some results appear to be outliers in Fig. 1a.</p> <p>3. Improve the figure appearance</p>	<p>1. Ok, replaced "regime" by "region"</p> <p>2. The bulk of them are within range, for coronal regimes other codes provide excessive mean charge</p> <p>3. I'll send you the figures you want as independent files. Indicate them</p>



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Optional/General comments	Overall, the presentation of the manuscript requires significant improvements for adequate review. I am concerned about reference to 2005, why is there reference to 2005, what happened since then? What are the authors trying to accomplish, and what exactly does this work show? It would help to perhaps see some comment about predicted/computed results with experimental results. Experiments would show error margins, thereby helping to evaluate the significance of the results from the different codes. If this is a review paper, more detail needs to be provided as well. Finally, the keywords include “Screened Hydrogenic Atomic Model” – can you comment on the relevance of hydrogenic, viz. can you discuss comparisons with hydrogen results?	<p>In this paper, there are modeled with ATMED CR steady-state plasmas proposed in the 4th Non-LTE Code Comparison Workshop held in December 2005. Cases for C, Ar, Fe, Sn, Xe and Au plasmas were selected for analyzing dense plasma physics, EUV lithography sources, cold plasmas, etc.</p> <p>The purpose of the paper is to observe the good agreement of atomic and radiative properties with respect to results of other codes which have participated in the storage inside the 4th NLTE database for a high number of cases</p>
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**PART 2:**

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