Reviewer #1's Comments:

1. Summary

We sincerely thank Reviewer #1 for reviewing our work and providing constructive feedback. We tried to address all the issues raised by Reviewer #1 in following format and the **changes made in the manuscript are highlighted in red**. Wherever relevant we highlighted **original text in green** to bring to the attention of reviewers.

2. Questions for General Evaluation	**Reviewer's Evaluation**	**Response and Revisions**
Does the introduction provide sufficient background and include all relevant references?	Yes	We thank Reviewer #1 for this evaluation
Are all the cited references relevant to the research?	Can be improved	We thank Reviewer #1 for this evaluation. We have made some modifications in references and new references are added relevant to the text Ref 9-17, 38, 52, 54 and 55.
Is the research design appropriate?	Yes	We thank Reviewer #1 for this evaluation
Are the methods adequately described?	Can be improved	We thank Reviewer #1 for this evaluation. Methods are improved as suggested. Kindly find the highlighted text in the manuscript from line 49 to line 68.
Are the results clearly presented?	Yes	We thank Reviewer #1 for this evaluation
Are the conclusions supported by the results?	Can be improved	We thank Reviewer #1 for this evaluation. Appropriate explanation and modification added.

3. Point-by-point response to Comments and Suggestions for Authors

No	**Comments & Suggestions**	
1	Please identify the novelty of this work and its necessity.	We thank Reviewer #1 for this comment. We would like to discuss the novelty and necessity of this study here- 1. At the time of this analysis LET optimization tools were not available for clinical use in the commercial treatment planning system. Hence, we evaluated LETd-optimization using distal-patching structures

		to stop beam inside target. This beam modification resulted in redistribution of high-LETd in the central region of GTV. 2. Such favorable distribution of high-LETd component can be easily exploited to target the radioresistant hypoxic core in large sarcomas/chordomas, which could potentially improve tumor control. In addition, this approach can be expanded to other radio-resitant malignancies as well. 3. To our knowledge this is the first study evaluating feasibility of LETd optimization in large pelvic sarcomas/chordomas. 4. Our results confirmed the technical feasibility of LET-optimization by 'distal-patching' strategy, and it can be easily implemented in the clinic. 5. Evaluation of LETd parameters in this study is especially necessary because they could predict the clinical outcomes (e.g., local relapse) as reported by Matsumoto et al [30] Hagiwara et a [31] and Molineli et al [32].The assessed LETd parameters in this study can be considered as a starting point for future LETd optimization in the clinic. 6. There is very limited literature available on LETd optimization in CIRT. Despite small number of patients, this study is a promising step in the direction of exploring and introducing simple and clinically achievable LET optimization methods. Kindly find the highlighted text in the manuscript from line 548 to line 553.
2	In introduction section, more literature is needed for Carbon-ion therapy.	We thank Reviewer #1 for this comment. more literature on Carbon-ion therapy is added in introduction section along with relevant references. Kindly find the highlighted text in the manuscript from line 49 to line 68.
3	There is no any information about the Radiotherapy Machine, its location and also the software of treatment planning.	We thank Reviewer #1 for this comment. The technical details regarding the radiotherapy Machine, its location and also the software of treatment planning are added in the materials and methods section. Kindly find the highlighted text in the manuscript from line 142 to line 157.
4	More explanation about the carbon-ion as a treatment probe is necessary.	We thank Reviewer #1 for this comment. In the introduction section as well as in some parts of the discussion we mentioned/added biophysical properties, clinical outcomes, biological models of CIRT and the possible influence of high-LETd of carbon ion beams in targeting radioresistant tumors. In addition, kindly find the highlighted text in the introduction section from line 49 to line 68.

*New references are added relevant to the text Ref 9-17, 38, 52, 54 and 55.

We hope our responses and modifications in the manuscript would adequately address concerns raised by Reviewer #1.

4. Response to Comments on the Quality of English Language

Point 1:

We have tried to improve language of this manuscript.