**Introduction and scope of the project**

The concept behind this work is to compile both the procedural and experimental developments that define microdosimetry in the context of ion beam therapy. To achieve this, we are gathering the latest research findings and subjected them to critical analysis. A step-by-step process is followed to accommodate the widest range of ideas: initially, on a specific topic diverse and sometimes contrasting points of view will be presented. This is then followed by discussions primarily through written contributions and, where possible, live debates. Depending on the outcomes of these discussions, the final version of the document will either reflect a convergence towards a unified perspective or delineate the existing divergences. The debate may be conducted in a spontaneous or a structured format—with distinct groups presenting their views (point and counterpoint) and, if necessary, with a moderator overseeing the discussion.

To prevent overlap and maintain focus, the initial step is to concentrate the debate on a single topic. With the final structure envisioned as an integrated whole, each subject is treated as a 'chapter' in a potential book.

The approach outlined in this work has several compelling implications for future research in microdosimetry and ion beam therapy:

Encouraging interdisciplinary dialogue: By actively integrating diverse perspectives—both experimental and procedural—it promotes richer, more nuanced scientific debate. Future research will likely be more collaborative, crossing traditional disciplinary boundaries.

Setting a framework for consensus-building: The structured process of presenting differing viewpoints followed by moderated discussion could become a model for refining hypotheses or even developing best practices in the field. It shifts the focus from isolated studies to a more communal pursuit of understanding.

Enabling dynamic research synthesis: Rather than relying solely on static reviews, this method allows for evolving synthesis as new insights emerge. The “living document” approach could improve responsiveness to emerging data and technologies.

Identifying knowledge gaps more efficiently: By mapping areas of disagreement or divergence, researchers can better target unresolved questions and prioritize studies that have the highest potential impact.

Boosting the pedagogical potential: Treating each thematic area as a “chapter” of a larger body of knowledge offers a more coherent learning structure. This could inform how training programs are shaped for future experts in microdosimetry.