Activity Report: Quantitative MRI: Basic Principles, Optimization, and Quality Assurance

24-26th October-Milan

I am deeply grateful to the Pianoforte grant for supporting my participation in the "Quantitative MRI: Basic Principles, Optimization, and Quality Assurance" course, organized by the European School for Medical Physics Experts (ESMPE) from October 24th to 26th, 2024, in Milan. This experience has been pivotal for my professional growth, enriching my knowledge and skills in medical physics, particularly within the specialized field of MRI.

The course provided an extensive and thorough exploration of quantitative MRI, covering essential topics such as signal generation, image reconstruction, and advanced quantitative methods. Led by renowned faculty, the sessions offered practical and theoretical insights into complex areas, including diffusion and perfusion techniques, quantitative mapping, artifact management, and MRI safety. This focus on precision, combined with the in-depth analysis of image quality assurance, has greatly enhanced my understanding of how to optimize MRI for accurate, reliable clinical application.

An essential component of this course was the emphasis on standardization and multicenter comparisons, which are crucial for maintaining consistency and accuracy in clinical MRI. The training in these methods will enable me to implement quality control processes more effectively, ensuring high standards in MRI practices that are crucial for precise diagnosis and patient outcomes.

In addition to the technical knowledge gained, the course facilitated valuable networking with peers and experts in the field, opening avenues for future collaboration and ongoing learning. This interaction underscored the collaborative spirit of the medical physics community, inspiring me to contribute further to the field.

Thank you once again to the Pianoforte grant for making this enriching experience possible. I am confident that the knowledge and skills I have gained will significantly benefit my career and enhance the quality of MRI services I can provide.

Francisco Mosquera-Pena Sánchez

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