



CONFERENCES

ESTRO 2024 Physics Track

Interview with Coen Hurkmans, Chair of the ESTRO 2024 Physics Track

This year, you have received 914 physics abstracts divided over 11 categories. Can you shed some light on the topics that score highly in the number of submissions?

Indeed there are a few topics that traditionally score highly in the number of submissions, and this trend has continued this year, in topics such as “detectors, dose measurements and phantoms” and “quality assurance and auditing”. Dose prediction, optimisation and applications for photon and electron planning have received the highest number of abstracts, 130.

Two new topics that have been added this year - “autosegmentation” and “machine-learning models and clinical applications (excluding imaging and segmentation)” have received around 70 abstracts each, which shows the research interest in these topics.

Remarkably, the number of abstracts related to “dose calculation algorithms”, which was a large field of research in the past, is low this year. I wonder if this is because we now have sufficiently accurate and fast algorithms in our treatment planning systems and our challenges have shifted elsewhere.

In the broader context of radiotherapy, artificial intelligence (AI) seems to be a hot topic. Could you share your insights into the importance of discussions around its safe and effective implementation?

It is clear in the everyday world and radiotherapy that AI is a hot topic. We have seen many AI-based papers and there will be a pre-meeting course on AI and its implementation. I believe discussions on how to use AI safely and effectively within radiotherapy and how we need to incorporate AI knowledge into our curricula and ESTRO school will be a focal topic of this ESTRO annual congress.

What advances or challenges can we expect in the intra and interfraction motion field?

With the expanding range of options on treatment machines to deal with this, results will be presented which will guide future use and developments in this field. New algorithms for image registration and dose accumulation are also being developed in this context. Such tools

are becoming even more important, as they can also be used for dose accumulation for the increasing numbers of patients who receive reirradiation.

What else shouldn't we miss in the physics track?

The physics proffered paper sessions and symposia but also the mini orals and poster discussions are all of high quality this year, due to all the good work performed by our ESTRO colleagues and others and the high number of abstracts received. They cover a very broad range of topics, including ion beam treatment, flash radiotherapy, image acquisition and processing, adaptive treatments and functional imaging and outcome prediction.

Is there any aspect of the congress you would like to highlight?

With the understanding that I cannot mention all important physics contributions to the conference, I want to highlight the papers in the interdisciplinary tracks. A paper on the Synthrad2023 synthetic CT challenge shows what we can achieve in this field. Such techniques can obviously further streamline parts of the radiotherapy process. In the interdisciplinary track on personalisation and optimisation of doses in radiotherapy, three high-scoring physics abstracts will be presented. These reflect ongoing research on how to improve and optimise dose distributions beyond the margin recipe.

What makes ESTRO's annual congresses so special according to you?

Besides these high quality presentations, ESTRO will offer a great opportunity to meet others. It's a great way to get to know new people, discuss ideas and generate new ones. You can set-up new collaborations and make new friends. Enjoy each other's company over a glass of Scottish whiskey or something less strong if you prefer. I hope to see you in Glasgow!

Check out the ESTRO 2024 scientific programme [here](#).



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