

Announcement: Galileo Galilei Award



The *Galileo Galilei Award in Medical Physics* is given every year to the best paper published in this journal in the previous year.

In 2024, the prize has been awarded to Dousatsu Sakata et al., “Prediction of DNA rejoining kinetics and cell survival after proton irradiation for V79 cells using Geant4-DNA”, *Phys. Med.* 2023;105:102508.

Physica Medica - the European Journal of Medical Physics, is happy to announce that the paper **“Time-Activity data fitting in molecular Radiotherapy: Methodology and pitfalls”** by Oleksandra V. Ivashchenko, Jim O’Doherty, Deni Hardiansyah, Marta Cremonesi, Johannes Tran-Gia, Eero Hippeläinen, Caroline Stokke, Elisa Grassi, Mattias Sandström, Gerhard Glatting, published in *Physica Medica*, Volume 117, January 2024: 103192 DOI:<https://doi.org/10.1016/j.ejmp.2023.103192>, has been elected the best paper published in the journal in the year 2024.

The paper presents the complex process of time-activity curve (TAC) modelling in molecular radiotherapy and its critical role in accurately estimating time-integrated activities (TIA), a fundamental component in radiopharmaceutical dosimetry. More specifically, the paper introduces a comprehensive methodological framework addressing the fitting of TACs from

quantitative imaging data, highlighting key variables such as sampling schedules, model selection, fitting algorithms, and error propagation, all of which influence the precision of absorbed dose calculations. The value of the work resides in the fact that it paves the way for improved reproducibility and harmonisation of patient-specific dosimetry across centres, thus enabling more reliable treatment planning in radiopharmaceutical therapy. In addition, it supports both the advancement of personalised radiotherapy and further research into robust dosimetry practices, while offering practical guidance applicable to both clinical and research settings.

The selection of the best paper has been performed on the basis of citations and downloads together with the assessment by the Editors, Associate Editors and members of the Editorial Board.

We congratulate the authors for this paper, as the winners of the Galileo Galilei Award 2024.

Prof. Iuliana Toma-Dasu
Physica Medica
Editor-in-Chief

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