

## 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 2022, the prize has been awarded to Fabio Di Martino et al., “A new solution for UHDP and UHDR (Flash) measurements: theory and conceptual design of ALLS chamber”, *Phys. Med.* 2022;102:9-18.

*Physica Medica* - the European Journal of Medical Physics, is happy to announce that the paper **“Prediction of DNA rejoining kinetics and cell survival after proton irradiation for V79 cells using Geant4-DNA”** by Dousatsu Sakata, Ryoichi Hirayama, Wook-Geun Shin, Mauro Belli, Maria A. Tabocchini, Robert D. Stewart, Oleg Belov, Mario A. Bernal, Marie-Claude Bordage, Jeremy M. C. Brown, Milos Dordevic, Dimitris Emfietzoglou, Ziad Francis, Susanna Guatelli, Taku Inaniwa, Vladimir Ivanchenko, Mathieu Karamitros, Ioanna Kyriakou, Nathanael Lampe, Zhuxin Li, Sylvain Meylan, Claire Michelet, Petteri Nieminen, Yann Perrot, Ivan Petrovic, Jose Ramos-Mendez, Aleksandra Ristic-Fira, Giovanni Santin, Jan Schuemann, Hoang N. Tran, Carmen Villagrasa, Sebastien Incerti, published in *Physica Medica*, Volume 105, January 2023: 102508, DOI: <https://doi.org/10.1016/j.ejmp.2022.11.012>, has been elected the best paper published in the journal in the year 2023.

*The paper presents the intricate relation between radiobiological modelling and simulation of the physical processes of radiation interaction with cells in order to provide a better understanding on the mechanisms behind radiation cell killing and damage repair. More specifically, the paper introduces an extension of the Geant4-DNA radio-biological application by adding a feature aiming at predicting the repair of the DNA damages and their kinetics as well as the survival fraction of cells at some time after irradiation. The value of the work resides on the fact that it opens up to further basic as well as applied research with applications in radiation therapy and radiation protection, in addition to providing better understanding of the processes behind the clinical manifestations of radiation induced cell damage and cell kill leading to the eradication of the clonogenic cells in the tumoral lesions as well as to the unwanted effects in the healthy tissues.*

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 2023.

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

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*Physica Medica: European Journal of Medical Physics* (EJMP) is published by Elsevier B.V. for the European Federation of Organisations for Medical Physics (EFOMP) and Associazione Italiana di Fisica Medica e Sanitaria (AIFM). EJMP is the official journal of the European Federation of Organisations for Medical Physics, the Associazione Italiana di Fisica Medica e Sanitaria (AIFM), the Société Française de Physique Médicale (SFPM), the Irish Association of Physicists in Medicine (IAPM) and the Sociedad Española De Física Médica (SEFM).