

Publications: Mario Pietro Carante

Articles in peer reviewed international journals

1. J. Storey, C.Canali, S.Aghion, O.Ahlén, C.Amsler, A.Ariga, T.Ariga, A.S.Belov, G. Bonomi, P.Bräunig, J.Bremer, R.S.Brusa, G.Burghart, L.Cabaret, M.Carante, R. Caravita, F.Castelli, G.Cerchiari, S.Cialdi, D.Comparat, G.Consolati, L.Dassa, S. DiDomizio, L.DiNoto, M.Doser, A.Dudarev, A.Ereditato, R.Ferragut, A.Fontana, P.Genova, M.Giammarchi, A.Gligorova, S.N.Gninenko, S.Haider, S.D. Hogan, T.Huse, E.Jordan, L.V.Jørgensen, T.Kaltenbacher, J.Kawada, A.Kellerbauer, M.Kimura, A.Knecht, D.Krasnický, V.Lagomarsino, A.Magnani, S. Mariazzi, V.A.Matveev, F.Merkt, F.Moia, G.Nebbia, P.Nédélec, M. K. Oberthaler, N.Pacifico, V.Petráček, C.Pistillo, F.Prelz, M.Prevedelli, C. Regenfus, C.Riccardi, O.Røhne, A.Rotondi, H.Sandaker, P.Scampoli, M.A. SubietaVasquez, M. Špaček, G.Testera, D.Trezzi, R.Vaccarone, S.Zavatarelli, Particle tracking at 4K: The Fast Annihilation Cryogenic Tracking (FACT) detector for the AEGIS antimatter gravity experiment, *Nuclear Instruments and Methods A* 732:437-441 (2013)
2. F. Ballarini, S. Altieri, S. Bortolussi, M. Carante, E. Giroletti and N. Protti, The BIANCA model/code of radiation-induced cell death: application to human cells exposed to different radiation types, *Radiat Environ Biophys*, 53:525-533 (2014)
3. F. Ballarini, S. Altieri, S. Bortolussi, M. Carante, E. Giroletti and N. Protti, The role of DNA cluster damage and chromosome aberrations in radiation-induced cell killing: a theoretical approach, *Radiat Prot Dosim*, 166:75-79 (2015)
4. M.P. Carante, S. Altieri, S. Bortolussi, I. Postuma, N. Protti and F. Ballarini, Modelling radiation-induced cell death: role of different levels of DNA damage clustering, *Radiat Environ Biophys*, 54:305–316 (2015)
5. L. Cansolino, A.M. Clerici, C. Zonta, P. Dionigi, G. Mazzini, R. Di Liberto, S. Altieri, F. Ballarini, S. Bortolussi, M.P. Carante, M. Ferrari, S.J. Gonzalez, I. Postuma, N. Protti, G.A. Santa Cruz and C. Ferrari, Comparative study of the radiobiological effects induced on adherent vs suspended cells by BNCT, neutrons and gamma rays treatments, *Applied Radiation and Isotopes*, 106:226–232 (2015)
6. M.P. Carante and F. Ballarini, Calculating Variations in Biological Effectiveness for a 62 MeV Proton Beam, *Front. Oncol.*, 6:76 (2016)
7. F. Ballarini and M.P. Carante, Chromosome aberrations and cell death by ionizing radiation: evolution of a biophysical model, *Radiation Physics and Chemistry*, 128:18-25 (2016)
8. S. Bortolussi, N. Protti, M. Ferrari, I. Postuma, S. Fatemi, M. Prata, F. Ballarini, M.P. Carante, R. Farias, S.J. Gonzalez, M. Marrale, S. Gallo, D. Nigg and S. Altieri, Experimental characterization of the thermal neutron irradiation facility at the TRIGA reactor of the University of Pavia, Submitted to *Physica Medica*

Proceedings and articles in national journals

1. F. Ballarini e M.P. Carante, XVI Convegno nazionale della Società Italiana per le Ricerche sulle Radiazioni. *Radiazioni – Ricerca e Applicazioni*, vol. XVII n.3 (2014)
2. M.P. Carante and F. Ballarini, Modelling the induction of cell death and chromosome damage by therapeutic protons, Proc. 14th Int. Conf. Nuclear Reaction Mechanisms, Varenna (Italy), June 15th –

- 19th, 2015, Edited by F. Cerutti, M. Chadwick, A. Ferrari, T. Kawano and P. Schoofs, CERN-Proceedings-2015-001, CERN, Geneva, 6:361-368 (2015)
3. M.P. Carante, Modellizzazione di morte cellulare e aberrazioni cromosomiche indotte da protoni di diverso LET presso i Laboratori Nazionali del Sud, *Radiazioni - Ricerca e Applicazioni*, XVIII:4-7 (2015)

Abstracts

1. N. Protti, F. Ballarini, S. Bortolussi, M.P. Carante, E. Giroletti, I. Postuma, G. Zanoni and S. Altieri, Computational studies to evaluate the feasibility of Neutron Capture Therapy (NCT) to slow down the progression of Alzheimer's Disease (AD), *16th International Congress on Neutron Capture Therapy*, Helsinki, Finland, Book of abstracts, 2014
2. L. Cansolino, A.M. Clerici, C. Zonta, C.M. Bianchi, P. Dionigi, G. Mazzini, R. Di Liberto, S. Altieri, F. Ballarini, S. Bortolussi, M.P. Carante, M. Ferrari, I. Postuma, N. Protti and Ferrari C., Comparative Study of the Radiobiological Effects Induced on Adherent vs Suspended Cells by BNCT, Neutrons and Gamma Rays Treatments, *16th International Congress on Neutron Capture Therapy*, Helsinki, Finland, Book of abstracts, 2014
3. I. Postuma, S. Bortolussi, N. Protti, F. Ballarini, M.P. Carante, M. Ferrari and S. Altieri, Geant4 study of BNCT mixed field energy deposit in an approximated healthy tissue geometry, *6th International Congress on Neutron Capture Therapy*, Helsinki, Finland, Book of abstracts, 2014
4. S. Bortolussi, I. Postuma, N. Protti, F. Ballarini, M. Carante, A. De Bari, P. Bruschi, C. Ferrari, L. Cansolino, C. Zonta, A.M. Clerici, L. Ciani, S. Ristori, L. Panza, S.J. Gonzalez, O. Galasso, G. Gasparini and S. Altieri, Results of pre-clinical studies of BNCT for Osteosarcoma, *6th International Congress on Neutron Capture Therapy*, Helsinki, Finland, Book of abstracts, 2014
5. F. Ballarini, M. Carante, A biophysical model linking DNA damage, chromosome aberrations and cell death, *NanoIBCT workshop MiND-IBCT*, Austria, Book of abstracts, 2014
6. M. Carante and F. Ballarini, Un modello biofisico di morte cellulare basato sulle lesioni a cluster del DNA e le aberrazioni cromosomiche: implicazioni sui meccanismi e applicazioni nell'ambito dell'adroterapia, *Radiazioni Ricerca e Applicazioni*, XVII-3 2014
7. N. Protti, M. Ferrari, F. Ballarini, S. Bortolussi, M.P. Carante, A. De Bari, E. Giroletti, I. Postuma, S. Gallo, M. Marrale, A. Longo, S. Panzeca, G. Iacoviello and S. Altieri, Caratterizzazione dosimetrica della facility a neutroni termici del reattore TRIGA di Pavia: studio della dose da fotoni mediante rivelatori ESR, *Radiazioni Ricerca e Applicazioni*, XVII-3 2014
8. L. Cansolino, A.M. Clerici, P. Dionigi, G. Mazzini, R. Di Liberto, S. Altieri, F. Ballarini, S. Bortolussi, M.P. Carante, M. Ferrari, I. Postuma, N. Protti, and Ferrari C., Radiosensitivity differences of adherent vs suspended cell lines exposed to BNCT, Neutrons and Gamma Rays radiations, *Radiazioni Ricerca e Applicazioni*, XVII-3 2014
9. I. Postuma, S. Bortolussi, N. Protti, F. Ballarini, M.P. Carante, M. Ferrari and S. Altieri, Geant4 study of BNCT mixed field energy deposit in an approximated healthy tissue geometry, *Radiazioni Ricerca e Applicazioni*, XVII-3 2014
10. M. Carante and F. Ballarini, A biophysical model of cell death based on DNA cluster lesions and chromosome aberrations, *5th International Congress of Radiation Research*, Kyoto, Japan, 2015
11. Testa A., Patrono C., Monteiro Gil O., Giesen U., Langner F., F. Ballarini, M. P. Carante, Palma V., M. Pinto and Rabus H., Alpha-particles microbeam irradiation: Analysis of radiation-induced chromosome damage on a cell-by-cell basis within the BIOQUART project, *5th International Congress of Radiation Research*, Kyoto, Japan, 2015
12. A. Testa, C. Patrono, O. Monteiro-Gil, U. Giesen, F. Langner, F. Ballarini, M. P. Carante, V. Palma, M. Pinto, H. Rabus, Detection of chromosome aberrations and micronuclei in CHO cells after alpha-particle microbeam irradiation within the BioQuaRT project, *The 12th International Workshop on Microbeam Probes of Cellular Radiation Response*, Tsuruga, Fukui, Japan, 2015

13. F. Ballarini and M. Carante, BIANCA, a model of radiation-induced cell death: biophysical mechanisms and possible applications for hadron therapy, *14th International Conference On Nuclear Reaction Mechanisms*, Varenna (Italy), 2015
14. M.P. Carante and F. Ballarini, Modeling chromosome aberrations and cell death by light ions: biophysical mechanisms and hadrontherapy applications, *61st Annual Meeting of the Radiation Research Society*, Weston, Florida, 2015
15. M.P. Carante and F. Ballarini, Biological effectiveness calculations for an eye melanoma proton beam: a modeling approach, *55th Annual Conference of the Particle Therapy Co-operative Group*, Prague, Czech Republic, 2016
16. M.P. Carante and F. Ballarini, Calculating variations in proton biological effectiveness by the BIANCA biophysical model, *42nd Conference of the European Radiation Research Society*, Amsterdam, The Netherlands, 2016
17. F. Ballarini, M.P. Carante and L. Pederzoli, BIANCA, a biophysical model of radiation-induced cell death and chromosome damage, *42nd Conference of the European Radiation Research Society*, Amsterdam, The Netherlands, 2016
18. F. Ballarini, M.P. Carante and L. Pederzoli, Particelle cariche e morte cellulare: a cosa servono i modelli biofisici?, *XVII Convegno Nazionale SIRR*, Trento, 2016
19. M.P. Carante and F. Ballarini, Efficacia biologica di un fascio terapeutico di protoni: un approccio modellistico, *XVII Convegno Nazionale SIRR*, Trento, 2016
20. L.Bianchini, S.Bortolussi, F.Ballarini, M.P.Carante, S.Fatemi, I.Postuma, L.Cansolino, A.M.Clerici, C.Ferrari, M.Biggiogera, S.Nicolis, M.Campagnoli, M.Galliano, C.Balducci, E.Brandi, L.Colombo, G.Forloni, G.Zanoni, S.Altieri and N.Protti, Pilot studies to evaluate the effectiveness of high LET particle irradiation in damaging neurotoxic protein aggregates. *17th International Congress on Neutron Capture Therapy*, Columbia, Missouri, USA, 2016
21. M.P. Carante and F. Ballarini, Calculating ion-induced cell death and chromosome damage by the BIANCA biophysical model, *ESTRO (European Society for Radiotherapy and Oncology) 36*, Vienna, Austria, 2016, Submitted