

Alessandro Scaggion

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"The person who really wants to do something finds a way; the other finds an excuse" – African proverb

Info

Italian citizen

Italian driving licenses A and B

Current Position

Medical Physicist

JANUARY 2019 - PRESENT DAYS, Istituto Oncologico Veneto IOV - IRCCS, PADOVA
Medical Physicist employed in the Medical Physics Department

Expertise

Nearly ten-year experience in the field of Radiotherapy expressly oriented towards technological innovation, applied research and automation of production processes

Attitude

Extremely adaptive and dynamic, consolidated multidisciplinary team work, decision-making and operational independence, high aptitude for problem solving, established learning and self-training skills

Previous professional activity

RayStation Physics Expert

DECEMBER 2017 - NOVEMBER 2018, Tecnologie Avanzate TA s.r.l.

Enrolled in the list of Radiation Protection Experts with the SECOND degree of qualification and with the order number 2416.

Research fellowship

JANUARY 2017 - DECEMBER 2018, S.C. Fisica Sanitaria Istituto Oncologico Veneto IOV - IRCCS, PADOVA

Educational grant

JULY 2013 - DECEMBER 2016, S.C. Fisica Sanitaria Istituto Oncologico Veneto IOV - IRCCS, PADOVA

Experience

My working experience has been focused on solving complex problems through statistical analysis and implementing algorithms. Author or coauthor of over 20 articles published in international journals, author or coauthor of more than 30 contributions to national and international scientific conferences in the field of medical physics and fusion plasma physics. I analyzed and monitored the accuracy of RT modulated treatments with particular attention to the RapidArc technique. Recently my scientific activity has focused on the configuration and use of advanced planning tools and methods for analyzing the quality and complexity of treatment plans. I'm actively involved in the clinical radiotherapy activity with

specific focus on SBRT and on-line adaptive treatments.

Member of ESTRO and AIFM (Italian association of medical physicist).

RELEVANT ACTIVITY FOR "X-Ray based Adaptive RT: Guidelines for quality assurance and clinical implementation" Task group.

At Istituto Oncologico Veneto - IOV we actually adopt off-line adaptive RT protocols for various sites (Head and Neck, disease of thoracic and pelvic districts) on C-arm Linacs and Tomotherapy platform. Off-line adaptive RT is based on daily CBCT (4D-CBCT) or MVCT imaging and off-line replanning after a new CT scan. Images matching through DIR is performed on two different commercial solutions.

At IOV Radiotherapy Department a Varian Ethos has started its clinical activity in late 2022. Approximately 2 patients every week are elected to begin the online ART protocol which is devoted to moderately hypo-fractionated prostate and moderately hypo-fractionated bladder treatments.

At IOV the installation of a Linac-RM has been confirmed and is going to be installed within the next 18 months.

During the last 5 years, I have been involved in the set-up and update of all internal protocols devoted to off-line and on-line Adaptive RT.

Education

Radiation Protection Experts: SECOND degree

DECEMBER 2016

Enrolled in the list of Radiation Protection Experts with the SECOND degree of qualification and with the order number 2416.

Medical Physics Degree - 70/70 cum laude

AUGUST 2013 - JUNE 2016, Università degli Studi di Torino, Torino, Italia

Thesis: *On the magnitude and detectability of VMAT delivery errors*, S.C. di Fisica Sanitaria, Istituto Oncologico Veneto - IRCCS, Padova, Italia

Joint Research Doctorate in Fusion Science and Engineering and European Doctoral Network

JANUARY 2010 - DECEMBER 2012, Università degli Studi di Padova, Padova, Italia

Thesis: *Thermal profile and improved confinement accessibility in RFX-mod and TCX*, Consorzio RFX, Associazione Euratom-ENEA sulla fusione, Padova, Italia and in collaboration with Centre de Recherche en Physique des Plasmas, Ecole Polytechnique Fédérale de Lausanne, Losanna, Svizzera

Master Degree in Physics - 110/110

DECEMBER 2007 - OCTOBER 2009, Università degli Studi di Padova, Padova, Italia

Curriculum: plasma physics. Thesis: *Filamentary structures in the edge turbulence of fusion devices*, Consorzio RFX, Associazione Euratom-ENEA sulla fusione, Padova, Italia.

Bachelor Degree in Physics - 103/110

OCTOBER 2004 - DECEMBER 2007, Università degli Studi di Padova, Padova, Italia

Curriculum: physics of matter. Thesis: *Caratterizzazione delle fluttuazioni elettrostatiche nella regione di bordo dell'esperimento RFX-mod in varie condizioni di scarica*, Consorzio RFX, Associazione Euratom-ENEA sulla fusione, Padova, Italia.

Scientific activity

Most relevant publications (since 2018)

- Malatesta T et al. 'Patient specific quality assurance in SBRT: a systematic review of measurement-based methods', *Physics in Medicine & Biology*, 68:21TR01, 2023.
- S. Cavinato et al. 'Prediction models as decision-support tools for virtual patient-specific quality assurance of helical tomotherapy plans' 26:100435, *Physics and Imaging in Radiation Oncology*, 2023.
- S. Cavinato et al. 'Quantitative assessment of helical tomotherapy plans complexity.' *Journal of Applied Clinical Medical Physics* 24: e13781, 2023.
- S. Cavinato et al. 'Quantitative assessment of helical tomotherapy plans complexity.' *Journal of Applied Clinical Medical Physics*, e13781, 2022.
- A. Tudda et al. 'Knowledge-based multi-institution plan prediction of whole breast irradiation with tangential fields.' *Radiotherapy and Oncology*, 175:10-16, 2022.
- A Scaggion et al. 'Limiting treatment plan complexity by applying a novel commercial tool', *Journal of Applied Clinical Medical Physics*. 2020
- M Sepulcri et al. 'Effectiveness of CBCT imaging during radiotherapy for the detection of initial COVID-19 lung disease', *Advances in Radiation Oncology*, 2020
- A Bettinelli et al. 'An IBEX adaption towards image biomarker standardization'. *Medical Physics*, 47 (3), 1167-1173, 2019.
- A Zorz, A Scaggion 'Standard Operating Procedures for Quality Control of PET/CT and PET/MR Tomographs' in: Volterrani, D., Erba, P.A., Carrió, I., Strauss, H.W. and Mariani, G. eds., 2019. *Nuclear Medicine Textbook: Methodology and Clinical Applications*. Springer.
- A Scaggion et al. 'Reducing inter- and intra-planner variability in radiotherapy plan output with a commercial knowledge-based planning solution'. *Physica Medica*, 53:86-93, 2018.
- Fusella et al. 'Efficiently train and validate a rapidplan model through apqm scoring'. *Medical Physics*, 45(6):2611-2619, 2018.

Most relevant participations (since 2018)

- JUNE 2023 Invited Speaker at AIFM 2023, Firenze, speaker
- MAY 2023 Invited contribution at ESTRO 2023, Wien, speaker
- SINCE OCTOBER 2021 Member of the ESTRO Workshop on "Harmonisation and standardisation in SBRT planning"
- JUNE 2022 Corso della Scuola Superiore di Fisica in Medicina "P. Caldirola", 'Tecniche avanzate ed automatiche nel planning radioterapico', Roma, speaker
- MARCH 2019 Corso della Scuola Superiore di Fisica in Medicina "P. Caldirola", 'Automation: challenges and opportunities in medical physics', Padova, speaker
- JUNE 2018 Corso della Scuola Superiore di Fisica in Medicina "P. Caldirola", 'Co-registrazione di immagini deformabile in radioterapia: metodi, assicurazione di qualità ed applicazioni cliniche', Napoli, speaker

Relevant award or acknowledgment (since 2018)

Recognised as one of the top 2020 and 2021 reviewers by the International Journal of Radiation Oncology*Biological Physics

Teaching activity

- AA2022/23 and subsequent Contract lecturer at the School of Specialization in Radiotherapy, University of Padua
- AA2022/23 and subsequent Contract lecturer at the School of Specialization in Medical Physics, University of Padua
- AA 2023 Contract lecturer at the Master of Advanced Studies in Medical Physics, University of Trieste - Abdus Salam International Centre for Theoretical Physics

Padova, 26/02/2024,

Alessandro Scaggion

Il sottoscritto autorizza il trattamento dei dati personali contenuti nel presente Curriculum Vitae ai sensi del Regolamento UE 2016/679