

## PROGRAM:

### IAEA Regional Workshop on Hadron Therapy

#### Hadron Therapy Workshop: status and perspectives, plans for next generation facilities

**Date:** 18 and 19 October 2024, (Times indicated are CEST i.e. UTC+2)

**Venue:** Concert Hall Building M2, Thessaloniki, Greece

**web page:** <https://indico.cern.ch/e/HadronTherapyWorkshop>

**Scientific Assistants:** Elpida Theodoridou (Uni Malta/DKFZ) chair, Nermine Muradi (Uni Tetova) chair, Alexandros Puckett Anastasiou (Uni Patra), Athanasios Athanasiou (AUTH), Christina Litou (AUTH), Dafni Giannakeri (AUTH), Effrosyni Chatzivasiloglou (AUTH), George Ntinis (AUTH), Maria Eleni Bozika (AUTH), Maria Vagianni (AUTH), Emina Huko (UNSA), Feriha Babic (UNSA), Naida Ustavdic (UNSA), Medina Dugonjic (UNSA), Danis Bradaric (UNSA).

#### FRIDAY 18<sup>TH</sup> OCTOBER 2024

#### SESSION 1 – HADRON THERAPY OVERVIEW

**Moderators:** Manjit Dosanjh, Yiota Foka

<u>Time</u>	<u>Title</u>
08:00 - 08:45	Participants registration
08:45 - 09:15	Welcome Addresses <b>Maria Bigaki</b> (IAEA CP, Papageorgiou), <b>Michail Karaviotis</b> ( Papageorgiou), <b>Sotirios Charisopoulos</b> (IAEA), <b>Sandro Rossi</b> (HITRIplus, CNAO), <b>Panagiotis Bamidis</b> (AUTH/AHEPA, ELEVIT)
09:15 - 09:35	Historic and scientific evolution of Hadron Therapy <b>Ugo Amaldi</b> (TERA) and <b>Sandro Rossi</b> (CNAO)
09:35 – 09:55	Hadron Therapy in clinical practice <b>Sara Lillo</b> (CNAO)
09:55 – 10:15	Radiobiology of Hadron Therapy <b>Angelica Facoetti</b> (CNAO)
10:15 – 10:35	HITRIplus project, its impact on boosting research in South East Europe and future perspectives <b>Sanja Damjanovic</b> (GSI)
10:35 – 10:55	Building capacity through the IAEA programs <b>Sotirios Charichopoulos</b> (IAEA)
11:00 – 11:30	Coffee Break

#### SESSION 2 – HADRON THERAPY DEVELOPMENTS AND FUTURE PERSPECTIVES

**Moderators:** Roberto Orecchia

<u>Time</u>	<u>Title</u>
11:30 - 11:50	Hadron Therapy: from pioneering times towards the future <b>Manjit Dosanjh</b> (Uni Oxford)
11:50 - 12:10	SEEIIST facility design and alternatives <b>Maurizio Vretenar</b> (CERN)
12:10 - 12:30	CERN as an example of large scale infrastructure <b>Emmanuel Tsesmelis</b> (CERN)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101008548

- 12:30 – 12:50** *Status and vision of the SEEIIST project*  
**Leandar Litov** (Uni Sofia)
- 12:50 – 13:00** *Concluding remarks*  
**Roberto Orecchia** (IEO)
- 13:00 – 13:45** *Round table – SEEIIST towards to the Future*  
**Moderators:** Sotirios Charisopoulos (IAEA), Sandro Rossi (HITRIplus, CNAO)  
**Panelists:** Maurizio Vretenar (CERN), Semi Harrabi (HIT)  
**Contributions:** Introduction, cancer incidence in SEE **Mimoza Ristova** (Uni Skopje)

**13:45 – 15:00** *Lunch Break*

### SESSION 3 – EXPERIENCES OF MULTIPARTICLE THERAPY FACILITIES IN OPERATION IN EUROPE

**Moderators:** Angelica Facoetti

<u>Time</u>	<u>Title</u>
<b>15:00 - 15:25</b>	<i>Hadron Therapy at GSI - where we come from, where we go</i> <b>Konrad Lehmann</b> (GSI)
<b>15:25 - 15:50</b>	<i>The HIT facility, technology, clinical applications and research: novel approaches in particle therapy</i> <b>Andrea Mairani</b> (HIT)
<b>15:50 - 16:15</b>	<i>The Krakow Hadron Therapy facility, lessons learnt</i> <b>Pawel Olko</b> (IFJPAN)
<b>16:15 – 16:30</b>	<i>Concluding remarks</i> <b>Angelica Facoetti</b> (CNAO)

**16:30 – 17:00** *Coffee Break*

### SESSION 4 – ADVANCES IN ACCELERATOR TECHNOLOGIES FOR HADRON THERAPY FACILITIES

**Moderators:** Laura Vallow

<u>Time</u>	<u>Title</u>
<b>17:00 - 17:20</b>	<i>Accelerator and beam physics developments for medical and societal applications at CERN</i> <b>Alessandra Lombardi</b> (CERN)
<b>17:20 - 17:35</b>	<i>Innovative gantry designs: Superconducting magnets for advanced gantry designs</i> <b>Ernesto De Matteis</b> (INFN)
<b>17:35 – 17:50</b>	<i>Innovative gantry designs-continued</i> <b>Ariel Haziot</b> (CERN)
<b>17:50 – 18:10</b>	<i>Pre-injector studies: first results on source measurements</i> <b>Aris Mamaras</b> (CERN/AUTH)
<b>18:10 – 18:25</b>	<i>An ion source project as a seed to build capacity for next generation accelerator physicists in Bosnia and Herzegovina</i> <b>Amer Ajanovic</b> (CERN/UNSA), <b>Danis Bradaric</b> , <b>Naida Ustavdic</b> , <b>Medina Dugonjic</b> (UNSA)
<b>18:00 - 18:40</b>	<i>Development of the first table-top X-ray FLASH system</i> <b>Elpida Theodoridou</b> (DKFZ, Uni Malta), <b>Joao Seco</b> (DKFZ, Uni Heidelberg)
<b>18:40 – 18:45</b>	<i>Concluding remarks</i> <b>Laura Vallow</b> (Mayo Clinic)



20:00 – 22:00 *Welcome, Music event and Welcome Drink*  
For more information click [here](#).

**Saturday 19<sup>th</sup> October 2024**

**Session 5 – INDICATIONS FOR HADRON THERAPY**

**Moderators: Arnold Pompos, Joao Seco**

<u>Time</u>	<u>Title</u>
09:00 - 09:25	<i>Chordoma treatments at CNAO</i> <b>Maria Rosaria Fiore</b> (CNAO)
09:25 – 09:45	<i>Sarcoma treatments in Greece</i> <b>Tasos Kyriazoglou</b> (Attikon University hospital)
09:45 – 10:05	<i>Radiosurgery for Skullbase Meningioma</i> <b>Christos Boskos</b> (ST. LUKE'S)
10:05 – 10:25	<i>SRS Treatment Planning for Endocranial Tumor</i> <b>Anna Makridou</b> (THEAGENIO)
10:25 – 10:50	<i>Personalization of hadron therapy for radioresistant cancers through bioindicators of radioresistance or conditional vulnerability</i> <b>Michael D. Story</b> (Mayo Clinic)
10:50 – 11:00	<i>Concluding remarks</i> <b>Arnold Pompos</b> (UTS) and <b>Joao Seco</b> (DKFZ)

11:00 – 11:30 *Coffee Break*

**SESSION 6 – SOCIO-ECONOMIC ASPECTS RELATED TO HADRON THERAPY**

**Moderators: Sandro Rossi**

11:30 - 11:50	<i>Hadrontherapy and EU clinical networks: status and perspectives</i> <b>Lisa Licitra</b> (CNAO, Uni Milan)
11:50 – 12:10	<i>Costs of hadrontherapy, the ABC analysis applied to operations in CNAO</i> <b>Maria Vittoria Livraga</b> (CNAO)
12:10 – 12:30	<i>Caring for cancer patients: the CNAO social approach</i> <b>Silvia Meneghello</b> (CNAO)
12:30 – 12:45	<i>The role of citizens in innovating health</i> <b>Katerina Zourou</b> (Web2Learn), <b>Stefania Oikonomou</b> (Web2Learn)
12:45 – 13:00	<i>The role of biomedical and clinical engineering societies in advancing and promoting Hadron Therapy on a national and international level</i> <b>Alkinoos Athanasiou</b> (AUTH, ELEVIT)
13:00 – 13:20	<i>Challenges and Opportunities in the Patient's Pathway to Access</i> <b>Menia Koukougiani</b> (NGO KARKINAKI)
13:20 – 13:35	<i>Empowering patient advocacy and cancer prevention</i> <b>Panagiotis Bamidis</b> (AUTH/AHEPA, ELEVIT)
13:35 – 13:40	<i>Concluding remarks</i> <b>Sandro Rossi</b> (CNAO)



13:40 – 15:00 *Lunch Break*

**SESSION 7 – PEDIATRIC ONCOLOGY AND ROLE OF HADRON THERAPY**

**Moderators: Antonio Capizzello, Emmanouel Chatzipantelis, Papakonstantinou Eugenia, Semi Harrabi**

<u>Time</u>	<u>Title</u>
15:00 – 15:15	<i>Carbon Programme in MedAustron</i> <b>Piero Fossati</b> (MedAustron)
15:15 – 15:30	<i>Pediatric Treatments in MedAustron</i> <b>Carola Lütgendorf-Caucig</b> (MedAustron)
15:30 - 15:45	<i>Hadron therapy state-of-the art in pediatric oncology-clinical aspects</i> <b>Sabina Vennarini</b> (CNAO)
15:45 - 16:00	<i>Treatment planning for pediatric cancer tumour treatments</i> <b>Alfredo Mirandola</b> (CNAO)
16:00 - 16:15	<i>Pediatric brain tumour surgery : where do we stand?</i> <b>Nikos Foroglou</b> (AUTH/AHEPA)
16:15 -16:30	<i>Role of surgery in pediatric soft tissue sarcoma</i> <b>Aikaterini Tzantzaroudi</b> (Hippokration Hospital)
16:30 – 17:00	<i>Coffee Break</i>
17:00 – 18:30	<b>Panel discussion: Paediatric Oncology in Greece</b>
17:00 – 17:15	<i>Clinical profile of pediatric oncology patients managed and treated in Pediatric Haematology and/or Oncology Unit University Hospital AHEPA</i> <b>Emmanouel Chatzipantelis</b> (AUTH/AHEPA)
17:15 – 17:30	<i>Clinical profile of pediatric oncology patients managed and treated in Pediatric Haematology and/or Oncology Unit Hospital Hippokrateio Hospital</i> <b>Evgenia Papakonstantinou</b> (Hippokrateio Hospital)
17:30 – 17:45	<i>Pediatric patients commonly referred for external beam Radiotherapy</i> <b>Capizzello Antonio</b> (AUTH/AHEPA), <b>Eftychia Tataridou</b> (Theageneio Hospital)
17:45 – 18:00	<i>The spectrum of pediatric patients referred for Proton Therapy</i> <b>Barbara Rombi</b> (APSS - TRENTO)
18:00 – 18:15	<i>Radiation treatment plan for pediatric cancer: a clinical view</i> <b>George Giakoumetis</b> (AUTH/AHEPA)
18:15 – 18:30	<i>Concluding remarks</i> <b>Semi Harrabi</b> (HIT)



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## SPEAKERS FUNCTIONS AND AFFILIATIONS

[Biographies of Invited Speakers from International Institutes can be found here](#)

[Biographies of Invited Speakers from Greek Institutes can be found here](#)

### SESSION 1 – HADRON THERAPY OVERVIEW

#### **Ugo Amaldi**

*Founder and president of the TERA foundation, Novara, Italy*

#### **Sandro Rossi**

*Director General, National Centre for Oncological Hadrontherapy (CNAO), Pavia, Italy*

#### **Michail Karaviotis**

*President Papageorgiou Hospital of Thessaloiniki, Greece*

#### **Maria Bigaki**

*Program Office Manager at Papageorgiou General Hospital, Thessaloniki, Greece*

#### **Sara Lillo**

*Radiation Oncologist, National Centre for Oncological Hadrontherapy (CNAO), Pavia, Italy*

#### **Angelica Facoetti**

*Head of experimental Radiobiology activities at CNAO, Pavia, Italy*

#### **Sanja Damjanovic**

*Senior Researcher, EU-office, GSI, Germany*

#### **Sotirios Charichopoulos**

*IAEA Technical coordinator of Regional Project Cooperation project RER6038 that supports capacity building in South East Europe*

### SESSION 2 – HADRON THERAPY DEVELOPMENTS AND FUTURE PERSPECTIVES

#### **Manjit Dosanjh**

*Former Senior Advisor for Medical Applications at CERN, Geneva, Switzerland.*

*Visiting Professor at University of Oxford (U.K.). She has coordinated the ENLIGHT (European Network for Light Ion Hadron Therapy) Network since 2006. She is the Networking Pillar for the HITRIplus project.*

*Project Leader for STELLA (Smart Technologies to Extend Lives with Linear Accelerators)*

#### **Maurizio Vretenar**

*Group leader of CERN NIMMS Next Ion Medical Machine Study*

#### **Emmanuel Tsesmelis**

*CERN International Relations, Prof Uni Oxford*

#### **Leandar Litov**

*Associate Professor in Particle Physics. Head, Atomic Physics Department · Faculty of Physics, Uni of Sofia*

#### **Roberto Orecchia**

*Scientific Director and Head of the Department of Medical Imaging and Radiation Sciences, European Institute of Oncology- IEO IRCCS, Milan, Italy*





**Semi Harrabi**

Radiation oncologist (Oberarzt), University Hospital Heidelberg, Primary responsible for Heidelberg Ion Beam Therapy Centre

**SESSION 3 – EXPERIENCES OF MULTIPARTICLE THERAPY FACILITIES IN OPERATION IN EUROPE**

**Konrad Lehmann**

Senior Researcher, Biophysics Department, GSI, Germany

**Andrea Mairani**

Prof. Dr. Group Leader, Medical Physicist at Heidelberg Ion Beam Therapy Center, Germany

**Pawel Olko**

Head of Division of Applications of Physics, Institute of Nuclear Physics Polish Academy of Sciences (IFJ PNA)

**SESSION 4 – ADVANCES IN ACCELERATOR TECHNOLOGIES FOR HADRON THERAPY FACILITIES**

**Yiannis Papaphilippou**

Group Leader of CERN Accelerators and Beam Physics group

**Aris Mamaras**

PhD Student at CERN and AUTH, Thessaloniki, Greece

**Ernesto De Matteis**

Experienced technologist with a strong background in superconducting magnet development and testing for high-energy physics applications. Currently serving as a Staff Member Technologist at INFN, LASA, Milan, Italy, leading the organization of a new infrastructure (Superconducting Magnet Development Laboratory) for the construction of superconducting magnets as part of the PNRR IRIS program

**Amar Ajanovic**

PhD, Researcher at CERN, Group Leader at UNSA, Sarajevo, BiH

**Danis Bradaric, Naida Ustavidc, Medina Duonjic,**

UNSA students, Sarajevo, BiH

**Elpida Theodoridou**

MSc Student at DKFZ and Uni Malta

**Laura Vallow**

Department chair, Professor of Radiation Oncology, Mayo Clinic Florida, US

**SESSION 5 – INDICATIONS FOR HADRON THERAPY**

**Maria Rosaria Fiore**

Radiation Oncologist (Chordoma and Chondrosarcoma – Sacrum and Spine), CNAO, Pavia, Italy

**Tasos Kyriazoglou**

Medical Oncology Unit, 2nd Propaedeutic Department of Medicine, Attikon University hospital

**Christos Boskos**

Radiation Oncologist, specialized in Stereotactic Radiosurgery (SRS), ISRS. Founder and Owner of the Medical



Company “Stereotactic Radiosurgery” he practices Radiosurgery in Hospitals and Clinics located in Athens and Thessaloniki.

**Anna Makridou**

Head of the Medical Physics department of Cancer Hospital of Thessaloniki “Theagenio”

**Michael D. Story**

Prof, Consultant, Mayo Clinic, Florida, USA

**Joao Seco**

Professor and Division Head, BioMedical Physics in Radiation Oncology, German Cancer Research Center (DKFZ) and University of Heidelberg, Germany

**Arnold Pompos**

Professor of Physics, Associate Vice Chair for Strategic Initiatives and Capital Investments, The University of Texas Southwestern Harold C. Simmons Comprehensive Cancer Center, USA

**SESSION 6 – SOCIO-ECONOMIC ASPECTS RELATED TO HADRON THERAPY**

**Lisa Licitra**

Director SC of Medical Oncology Department, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy.

Associated Professor at Università degli Studi di Milano, Italy.

Scientific Director of the Italian National Center for Oncological Hadrontherapy, CNAO, Pavia Italy

**Maria Vittoria Livraga**

Head of Finance and Administration at CNAO, Pavia, Italy

**Silvia Meneghello**

Head of Communications, CNAO, Pavia, Italy

**Katerina Zourou**

Director of Web2Learn, recognized researcher in the area of digital (language) education.

**Stefania Oikonomou**

Political Scientist, digital learning and social participation expert at Web2Learn

**Panagiotis Bamidis**

Professor, Medical Physics, Informatics and Medical Education, Aristotle University of Thessaloniki School of Medicine

President, Hellenic Society of Biomedical Technology (ELEVIT)

**Alkinoos Athanasiou**

Assistant Professor of Neurosurgery, Aristotle University of Thessaloniki (AUTH)

Vice-President, Hellenic Society of Biomedical Technology (ELEVIT)



## Menia Koukougiani

*Managing partner of The add case, an agile team of professionals, with more than 20 years of experience in strategic communication and shaping policy outcomes for companies, associations, non-profit organizations and the public sector, co-founder of the non-profit organization KARKINAKI*

## SESSION 7 – PEDIATRIC ONCOLOGY AND ROLE OF HADRON THERAPY

### Piero Fossati

*Specialist doctor in radiooncology, scientific director, director of the MedAustron carbon programme*

### Carola Lütgendorf-Caucig

*Clinical director radiooncology, director of pediatric and CNS particle therapy*

### Sabina Vennarini

*Head of Pediatric Radiation Unit in INT Fondazione IRCCS Istituto Nazionale Tumori and Senior Clinical Consultant for Pediatric Proton Therapy CNAO, Pavia, Italy*

### Alfredo Mirandola

*Senior Deputy Medical Physicist and Coordinator in the field of Dosimetry and Pediatric Treatments, CNAO, Pavia, Italy*

### Nicolas Foroglou

*MD, PhD, Professor Aristotle University of Thessaloniki,*

*Head at the Department of Neurosurgery clinic AHEPA University Hospital, Thessaloniki Greece*

### Aikaterina Tzantzarodi

*MD, MSc, PhD, Consultant Pediatric Surgeon Paediatric Surgery Department at Hippokration General Hospital, Thessaloniki Greece*

### Emmanouel Hatzipantelis

*Professor of Aristotle University of Thessaloniki, Thessaloniki Greece*

*Professor of Paediatrics - Pediatric Hematology, Oncology, 2nd Department of Pediatrics, University Hospital AHEPA, Thessaloniki Greece*

### Evgenia Papakonstantinou

*MD MSc PhD Head of pediatric Oncology Department at Hippokration General Hospital, Thessaloniki Greece*

### Antonio Capizzello

*Ass. Professor of Aristotle University of Thessaloniki, Radiotherapy oncology department, AHEPA University Hospital, Thessaloniki Greece*

### Eftychia Tataridou

*Anticancer Hospital Theageneio, Radiation Oncology DPT Thessaloniki Greece*

### Barbara Rombi

*MD, PhD Pediatric Radiation Oncology program at Proton Therapy Center, APSS Trento Italy*





**George Giakoumetis**

*Medical Physics Department, AHEPA University Hospital, Thessaloniki Greece*

