Helmholtz-Zentrum Dresden-Rossendorf e.V.

With cutting-edge research in the fields of ENERGY, HEALTH and MATTER, around 1,500 employees from more than 70 nations at Helmholtz-Zentrum Dresden-Rossendorf (HZDR) are committed to mastering the great challenges facing society today. At the Institute of Radiooncology – OncoRay scientists (f/m/d) specializing in medicine, physics, biology and IT work together to crucially improve the treatment of cancer by administering radiation therapy that is biologicallypersonalized and technically-optimized. The Department of Medical Radiation Physics is looking for a Postdoc (f/m/d) AI-based automated adaptation and biological optimization of proton therapy.

Postdoc (f/m/d) AI-based automated adaptation and biological optimization of proton therapy

City: Dresden; Starting date (earliest): 01/01/26; Duration: 24 months;
Remuneration: TVöD-Bund; Reference number: 2025/117; Closing date: 15/10/25

Working field

- You will push the limits of translational medical physics research in hot-topic proton therapy projects. In close collaboration with colleagues from other institutions and our clinical team, you will establish biologically optimized proton therapy treatments by implementing methods for considering the variable biological effectiveness of protons based on NTCP modelling, identified risk factors and the LET.
- Of equal importance is your key contribution to our focus project of realizing online-adaptive proton therapy, enabled by an AI driven, fully automatized feedback loop of imaging, PGI-based treatment verification and fast adaptation. Therefore, you will develop efficient machine-learning models for fast, automated data processing and decision support, e.g. regarding the identification of adaptation needs.
- You are expected to publish in peer-reviewed journals and participate in international conferences. The supervision of students and doctoral candidates and the application for funding are self-evident tasks.

Requirements

- Holding an excellent PhD in the field of Medical Physics or comparable applied/natural science
- Profound knowledge in machine-learning and strong affinity to apply this in the field of radiotherapy
- Expertise in the research field of translational medical physics for proton or ion beam therapy; focusing on biological modelling is an advantage
- Very good programming skills, e.g. in python

- Actively pursued publishing activities and first experiences in third-party fundraising
- Competent operation of the TPS RayStation
- Independent, pro-active, structured and solution-oriented work attitude
- Strong scientific communication skills in English and preferably in German as well
- Experience and enjoyment of working in an international, multidisciplinary environment, incl. clinicians and medical physicists

What we offer

- A vibrant research community in an open, diverse and international work environment
- Scientific excellence and extensive professional networking opportunities
- Salary and social benefits in accordance with the collective agreement for the public sector (TVöD-Bund) including 30 days of paid holiday leave, company pension scheme (VBL)
- We support a good work-life balance with the possibility of part-time employment, mobile working and flexible working hours
- Numerous company health management offerings
- Employee discounts with well-known providers via the platform Corporate Benefits
- An employer subsidy for the "Deutschland-Ticket Jobticket"

Application

We look forward to receiving your application documents (including cover letter, CV, diplomas/transcripts, etc.), which you can submit via our online-applicationsystem: https://www.hzdr.de/db/Cms?pNid=490&pLang=en&pOid=75576

More information at https://stellenticket.de/197929/TUB/
Offer visible until 11/10/25