



The German Cancer Research Center is the largest biomedical research institution in Germany. With more than 3,000 employees, we operate an extensive scientific program in the field of cancer research.

The Division of **Medical Physics in Radiology** is seeking a

PhD Candidate for Parallel Transmission in High-Field MRI

(Ref-No. 2022-0168)

Job description:

The DKFZ conducts diverse magnetic resonance (MR) research projects at 7 Tesla ranging from basic methodological development to clinically-oriented research studies in volunteers and patients. At 7 Tesla, the wavelength of the radiofrequency (RF) waves necessary to excite the tissue spins approaches the size of the body diameter, and wave effects degrade the uniformity of the transmit field. The goal of the position is to develop and optimize MR measurement protocols utilizing parallel transmit techniques to cope with this problem. The 7 Tesla imager at the DKFZ is equipped with a self-developed 32-channel parallel transmission system including a 32-channel transmit/receive RF body coil.

Your research work will encompass:

- adaptation of standard as well as newly developed MR pulse sequences to the parallel transmit hardware and software components,
- design of RF pulses and gradient waveforms for multi-channel transmit,
- optimization of MR measurement protocols and analysis procedures,
- evaluation of the clinical benefit of parallel transmission techniques with respect to diagnosis and characterization of disease processes.

Requirements:

Successful candidates will become members of a multidisciplinary international team and should:

- hold a graduate degree (Master's / Diploma) in physics, engineering, or a related scientific or technical field,
- possess keen interest in scientific research and be able to work independently,
- have good oral and written communication skills in both German (ideal) and English (mandatory).

Experience in MR physics including pulse sequence programming and RF pulse design (preferred: C/C++, MATLAB/Python, IDEA, ICE) would be beneficial but is not a prerequisite.

We offer:

- Interesting, versatile workplace
- International, attractive working environment
- Campus with modern state-of-the-art infrastructure
- Access to international research networks
- Doctoral student payment including social benefits
- Flexible working hours
- Comprehensive training and mentoring program through the Helmholtz International Graduate School

The position is limited to 3 years.

Important notice:

The DKFZ is subject to the regulations of the Infection Protection Act (IfSG). As a consequence, only persons who present proof of immunity against measles as well as against COVID-19 may work at the DKFZ.

For further information please contact
Prof. Dr. Mark Ladd, phone +49 (0)6221/42-2550.

The DKFZ is committed to increase the proportion of women in all areas and positions in which women are underrepresented. Qualified female applicants are therefore particularly encouraged to apply.

Among candidates of equal aptitude and qualifications, a person with disabilities will be given preference.

To apply for a position please use our online application portal (www.dkfz.de).

We ask for your understanding that we cannot return application documents that are sent to us by post (Deutsches Krebsforschungszentrum, Personalabteilung, Im Neuenheimer Feld 280, 69120 Heidelberg) and that we do not accept applications submitted via email. We apologize for any inconvenience this may cause.

