



PhD Student Position (wissenschaftliche/r Mitarbeiter/in)

in the field of

Radiation characterization of electronic parts for use in space applications

The spaceborne computers group of the Institute for Computer & Communication Engineering offers a possibility to work as “wissenschaftliche/r Mitarbeiter/in” at the Institute on research topics related to spaceborne computers and mass memories including reconfigurable digital systems.

The group is active in design of computers and mass memories for space applications since more than 40 years and has contributed to many international space missions (e.g. ESA, NASA, JAXA) with electronics units. More information can be gained on the web site of the institute (www.ida.ing.tu-bs.de).

Parts selection is a fundamental task in the design of spaceborne computers due to the environmental conditions in space. Typically high long term reliability is a must for the design of electronics for space. The major influence within the space environment is the particle radiation, which has several failure effects on modern electronics. The electronic units may be built on basis of radiation tolerant devices, but especially e.g. for semiconductor mass memories, only commercial devices are available to build up high storage volumes.

To be able to use these commercial devices in space, a characterization of the radiation induced effects and failure modes needs to be performed. This requires (i) design of specific test equipment and (ii) test campaigns using dedicated test facilities followed by thorough evaluation of the test results. Based on this the feasibility of the devices for space applications and the design of application specific countermeasures for the radiation induced failure modes can be done. The group is performing this parts characterization e.g. for the European Space Agency or for space industry.

We are looking for an excellent, just graduated student with university degree in electrical engineering or computer science. Experience would be appreciated in topics like firmware and software design in VHDL/ System C/ C / C++ and/or high speed electronics design such as PCB hardware layout. As working language German or English is required, the willingness to improve German language skills - if not provided - would be appreciated.

The position is fully paid according to the German tariff for civil servants (TvL 13). It is dedicated to the work in research projects of the group and includes the possibility to achieve a doctoral degree in Engineering of the Faculty of Electrical Engineering, Information Technology and Physics at the Technische Universität Braunschweig.

Interested persons may contact:

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