

INTERNATIONAL EXCELLENCE FELLOWSHIPS

Experience Report 2020/2021

Name and title of fellow	Dr. Hawwa Kadum
Duration and time of research stay	3 months: 01.09.2021 – 30.11.2021
Host professor and host institute at KIT	Prof. Hape Schmid IMK-IFU

Testimonial

My research field is
<p>Atmospheric Environmental Research: Land-Atmospheric Feedback in the Earth System over Heterogeneous Surfaces</p>
How my research field is going to affect the world of science?
<p>The scientific outcomes of this research will include new knowledge regarding the effects of heterogeneity on turbulent fluxes. This knowledge sheds light on some of the inaccuracy causes in atmospheric models. The results provide information on scales smaller than the atmospheric models' spatial resolution, hence, compensating for missing information. This work has a broader impact on land management, human health, and climate change. Forest range expansion can be modeled with increased confidence while logging and urban development can ensure habitat fragmentation does not impede gene flow. Understanding the heterogeneity impact on greenhouse gas fluxes allows for sustainable interactions with the environment. The description of turbulent processes in heterogeneous surfaces and its role in advancing the atmospheric models leads to better weather forecasting and prediction of extreme events. Accurate long-term weather predictions are beneficial to agriculture, wind farm management, wildfire control, and volcanic ash spread preparations. Preparing for extreme events helps avoid human health risks and reduces the economic impact of such occurrences.</p>
My main finding / highlight during my research work at KIT was
<p>The joint work during the research stay resulted in the application of the newly developed heterogeneity parameter to a realistic forest canopy, the development of research questions and plans for scientific publications, writing a successful postdoc funding proposal for the YIG-Prep-Program, and the development of a two-year plan to write and submit a junior research group proposal</p>

I have chosen the Karlsruhe Institute of Technology because

I chose KIT due to the shared research interest with the Urban and Eco-climatology group. I also found a great chance at building cooperation with multiple research groups working on large-scale projects. KIT is unique in the variety of support, programs, facilities available and in its international orientation.

If you want to, you can give advice to the next fellows. What should they know about Karlsruhe, KIT and the International Excellence Fellowships program?

KIT is a prestigious research institution that can offer a fertile environment to nurture virtually any research questions or interests you may be interested in. The International Excellence Grant is a great way to learn about all the available environments, the possible configurations of joint research with the institute, and to find exactly where your research fits in the variety of large-scale projects and research groups working on cutting edge science and grand challenges.