



Fall School 2020 – Stochastic Methods in Modelling

When? Monday October 5th – Friday October 9th

Where? Haus Schwarzwaldsonne, Freudenstadt

Who?



Amidst the “New Normality of Year 2020”, the fall school on stochastic methods in modelling took place in beginning of October in Freudenstadt. The group of participants consisted mostly of the RTG researchers and few external students, owing to the Covid-19 restrictions. The small but high-spirited group equipped with their masks and adhering to social distancing rules ensured the successful completion of the school.

The first day included **presentations** from the participating researchers depicting their fascination for their research work. The presentations were followed by questions and discussions on the topics, with active participation of the audience.

The second day started with lectures from Prof. Wolfgang Nowak on the topics of **Bayesian modelling** and Monte Carlo sampling methods. Prof. Olaf Cirpka took over from Wednesday to Friday, introducing the group to topics of multivariate Gaussian distributions, ensemble Kalman techniques and geostatistical methods like variogram fitting, interpolation by Kriging and **Gaussian process emulation**. All the lectures were divided into theory sessions followed by hands-on exercise sessions in MATLAB. With their dynamic and interactive style of teaching, both Prof. Nowak and Prof. Cirpka provided a basis for applying statistical methods to **quantify uncertainty** in hydrosystem models.

On Thursday afternoon the group went for a hike in the beautiful Black Forest, guided by Prof. Cirpka. Starting from a geological outcrop of Buntsandstein, the tour went through parts of the forest, passed a restaurant and ended at a measurement station of the German weather service. This informal event encouraged discussions about research and other topics.

On Friday evening the group departed for their respective return journeys after an intensive but fun week spent on learning and interacting with fellow researchers. Not only did the participants gain knowledge and insights, but also the mere physical presence of other people brought hope and relief to some of them, especially under the present Covid-19 pandemic restrictions on human life.