NEWSLETTER
Extra

of the Work Group Mathematical Fluid Mechanics

Newsletter no. 8 (2025)

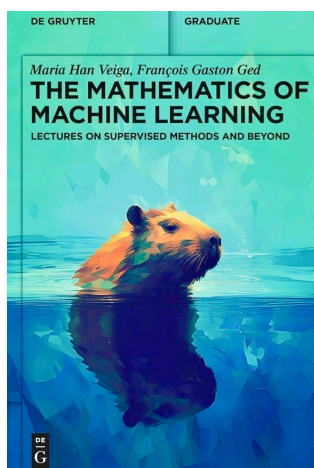## Jiahui Zhang will join our work group

Jiahui Zhang

Maria Han Veiga visits us May 18 - 24

Maria Han Veiga will visit us the week May 18 - 24, 2025. She is an assistant professor at Ohio State University, in Columbus, Ohio, USA.

In 2020 she received her PhD from University of Zürich being co-supervision by Rémi Abgrall. Already then she began to work on both numerical methods for conservation laws and on the theory of machine learning.

Maria Han Veiga

Jiahui Zhang is about to receive her PhD degree from the Chinese University of Science and Technology in Hefei, China. Her supervisors are *Yinhua Xia* and *Yan Xu*, who themselves received their PhD from *Chi-Wang Shu*.

Jiahui's PhD work is on high order numerical methods for shallow water equations. She has agreed to join us in Würzburg afterwards. The time of her arrival in Würzburg depends on how long it takes to obtain a visa.

Jiahui will be working on a project funded by the Deutsche Forschungsgemeinschaft (DFG) together with its Spanish counterpart, the Agencia Estatal de Investigación (AEI). With this grant we will compare different genuinely multi-dimensional schemes for models of conservation laws modeling flow for complicated shallow water flows. In particular she will contribute to our effort in moving the Active Flux numerical method forward.

Kathrin Hellmuth and myself learned a lot from her understanding of machine learning. De Gruyter, Berlin last year published a book by Maria on that topic: "*The mathematics of machine learning - lectures on supervised methods and beyond*". Maria had inspired the *Mathematics of Machine Learning* course Kathrin and myself both taught here in Würzburg.

Maria will give a lecture on Thursday, May 22 titled "*Mathematical aspects of generative machine learning models*". You can find the announcement of her lecture *here*.