**How do you brew perfect beer? I don’t know yet, but I am working on it!**

What do beer brewing, bird flocking, printing, and nano-filtration have in common? Find out at the colloquium this Friday! There I will explain how to build a mathematical model that describes all the things I mentioned above, and more! Once we have this model, we will ask further questions: How do we get the yeast to sediment quicker so the brewing process is sped up? How do we get the ink to dry uniformly on the paper when we print? Or put in a broader context: What is the optimal problem setup (the thing I can control) that will get me the closest to my desired outcome?

In my research project I am working on exactly these questions and if you’re interested in the official description: I am working on optimal control for multiscale particle dynamics, which are modelled by integro-PDEs. But don’t worry; I promise you can definitely come along and learn something new without knowing anything (yet!) about my field!