

Meeting report 28-04-2020

Attended by:

- D. Koetsenruijter (Author)
- L. Keyzer (First Supervisor)
- J. Pietrzak (Second Supervisor)

The meeting starts after a small technical delay, with D. Koetsenruijter shortly explaining his line of thought with respect to the research question. Hereafter he explains his line of approach which invokes a discussion about what strategy is required to fulfill the research objective and possibly answer the research question(s). In general the supervisors emphasize a more explorative attitude may be desirable for which they advise the following:

First get an understanding of the lock exchange in terms of dispersion and diffusion. Especially with respect to the model and what can be expected from the model used in terms of over/undershooting or overdamping.

It is suggested that the model is hydrostatic and thus would not account for vertical advection processes. This would indicate that a diffusive (overly damped) result might be expected. For the same reason it seems improbable that a stable solution might be attained.

Be curious and try out different research setups. Possibly try it in 2.5D and look at what values might be realistic.

Initially focus on a qualitative explanation of the observed phenomena and numbers. As a start explore first- and second order upstream based discretization schemes. So perform a qualitative evaluation of terms in a very basic setup before starting a quantitative sensitivity analysis with respect to timestep size, grid resolution and other numerical parameters such as mixing and turbulence coefficients or using an advanced advection discretisation scheme.

Some indicator parameters are discussed and it is explained that a lot of indicators could be relevant as long as it is explained for what reasons an indicator is relevant and/or applicable.

All of the above advice is given while discussing the subject, both the advice and the discussion clarify the research objectives and corresponding steps to be taken.

Finally it is agreed upon that D. Koetsenruijter will send his Plan of Action by the end of week 2 along with a corresponding planning, this meeting report is provided as soon as possible after the meeting. Subsequently both supervisors will respond with a (short) written evaluation of these documents.

It was a fruitful first meeting. Towards a successful bachelor thesis!