06-10-2020 – How to setup inversion in Aarhus Workbench

1. What level of residual should be reached during inversion?

   There is no real answer to that. Ideally you should end up with a data residual below 1, but as this depend on the uncertainty that has been assigned to your data, you can certainly end up in situations where this won't be possible.

   What I would suggest is, that you look at some sounding plots with soundings that had a high data residual in your inversion. Consider why they might have a high data residual. Do you see any signs of coupling or noise in the data that could explain why they could not be fitted? If you have data that simply cannot be fitted that can end up pulling the whole inversion. How large is the data uncertainty and does it look realistic? Could you imagine a forward response that would have fitted the data better? It can be that you have started the inversion with a problematic model or model parameters that sends it into a local minimum. There can be other more fundamental reasons, but then you would normally have trouble fitting anything.

2. Is it possible to calculate field (forward problem) for the model (section)?

   I am not sure I quite understand this question. We do calculate a forward response for the last model found by the inversion. If you export an inversion node, using (export to) data from the workspace ribbon, it will create a *_dat.xyz file with the data as it was used in the inversion, a *_syn.xyz file with the synthetic forward calculation of the final model, and a *_inv.xyz file with the model description.

   If it is more that you want to calculate different forward responses for different setups, you are perhaps more looking for something like EMMA:

   https://www.aarhusgeosoftware.dk/emma

If you have additional questions to this, you are welcome to contact us through support@aarhusgeosoftware.dk