- Supplementary Information -

Reanalysis of vertical mixing in mesocosm experiments: PeECE III and KOSMOS 2013

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Figure 1. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #1 of PeECE III. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 2. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #2 of PeECE III. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 3. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #3 of PeECE III. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 4. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #4 of PeECE III. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 5. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #5 of PeECE III. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 6. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #6 of PeECE III. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 7. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #7 of PeECE III. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 8. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #8 of PeECE III. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 9. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #9 of PeECE III. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 10. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #1 of KOSMOS 2013. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 11. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #2 of KOSMOS 2013. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 12. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #3 of KOSMOS 2013. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 13. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #4 of KOSMOS 2013. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 14. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #5 of KOSMOS 2013. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 15. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #6 of KOSMOS 2013. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 16. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #7 of KOSMOS 2013. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 17. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #8 of KOSMOS 2013. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 18. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #9 of KOSMOS 2013. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).



Figure 19. Temporal evolution of temperature, salinity, and diffusivity profiles in mesocosm #10 of KOSMOS 2013. The first row shows observed temperature and salinity; the following rows show simulated temperature, salinity, and diffusivity for a) the salinity optimisation (second row), b) the temperature optimisation (third row), and c) the optimisation that depends on both temperature and salinity (fourth row).