



Max-Planck-Institut
für Meteorologie



Max-Planck-Institute for Meteorology

ICON Modelling Framework

License Agreement

4. July 2018

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Prof. Dr. Jochem Marotzke

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Name: ICON modelling framework

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- Grid generator
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9. Appendices

Reference list:

- Giorgetta M. A. et al. (2018). ICON-A, the atmosphere component of the ICON Earth system model. Part I: Model description. Journal of Advances in Modeling Earth Systems, 10. <https://doi.org/10.1029/2017MS001242>
- Crueger T. et al. (2018). ICON-A, the atmosphere component of the ICON Earth system model. Part II: Model evaluation. Journal of Advances in Modeling Earth Systems, 10. <https://doi.org/10.1029/2017MS001233>
- Korn P. (2017). Formulation of an unstructured grid model for global ocean dynamics. Journal of Computational Physics, 339(C), 525–552. <https://doi.org/10.1016/j.jcp.2017.03.009>
- Heinze R. et al. (2017). Large-eddy simulations over Germany using ICON: a comprehensive evaluation. Q. J. R. Meteorol. Soc., 143(702), 69–100. <https://doi.org/10.1002/qj.2947>

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PREAMBLE

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