

Project: **1118**

Project title: **DyKliLand**

Principal investigator: **Merja Toelle**

Report period: **2022-05-01 to 2023-04-30**

For MAPPY transient future simulations at convection-permitting scale (~ 3km) were performed over Central Europe and the Iberian Peninsula with the regional climate model COSMO-CLM (v5.16) for the period 2006 to 2070 based on RCP2.6 and RCP8.5 scenario. The future simulations based on RCP2.6 over the Iberian Peninsula is still running. All simulations are performed as a direct downscaling experiment as results of direct downscalings are within the range of other regional climate simulations results or even superior compared to observations (see Coppola et al. 2018 and Ban et al. 2021). The historical and future simulations were bias-corrected using a quantile-mapping model. The RCP2.6 simulation over the Iberian Peninsula still needs to be bias corrected. Our MAPPY project partners use the bias-corrected data for their vegetation impact models.

Publications

Ban, N., Caillaud, C., Coppola, E., Pichelli, E., Sobolowski, S., Adinolfi, M., Ahrens, B., Alias, A., Anders, I., Bastin, S., Belušić, D., Berthou, S., Brisson, E., Cardoso, R. M., Chan, S. C., Christensen, O. B., Fernández, J., Fita, L., Frisius, T., Gašparac, G., Giorgi, F., Goergen, K., Haugen, J. E., Hodnebrog, Ø., Kartsios, S., Katragkou, E., Kendon, E. J., Keuler, K., Lavin-Gullon, A., Lenderik, G., Leutwyler, D., Lorenz, T., Maraun, D., Mercogliano, P., Milovac, J., Panitz, H.-J., Raffa, M., Remedio, A. R., Schär, C., Soares, P. M. M., Srnec, L., Steensen, B. M., Stocchi, P., Tölle, M. H., Truhetz, H., Vergara Temprado, J., de Vries, H., Warrach-Sagi, K., Wulfmeyer, V., Zander, M. J. (2021): The first multi-model ensemble of regional climate simulations at the kilometer-scale resolution, Part I: Evaluation of precipitation. *Climate Dynamics*, DOI: 10.1007/s00382-021-05708-w

Coppola, E., S. Sobolowski, E. Pichelli, F. Raffaele, B. Ahrens, N. Ban, M. Belda, D. Belusic, U. van Bert, R. M. Cardoso, S. Davolio, A. Dobler, J. Fernandez, L. Fita Borrell, Q. Fumiere, K. Goergen, I. Güttler, S. Kartsios, E. Katragkou, L. Kendon, S. Khodayar, S. Knist, A. Lavin, T. Lorenz, D. Maraun, L. Marelle-Sebrechts, J. Milovac, H.-J. Panitz, M. Piazza, T. Raub, C. Schär, K. Sieck, P. M. M. Soares, S. Somot, P. Stocchi, C. Teichmann, M. H. Tölle, L. Torge, H. Truhetz, R. Vautard, H. de Vries, K. Warrach-Sagi, F. Giorgi, 2018: The CORDEX FPS on convective phenomena at high resolution over Europe and the Mediterranean: work plan description and preliminary results, *Climate Dynamics*, DOI: 10.1007/s00382-018-4521-8