



CoFoLaMo: Comparing forest landscape model simulations under different climate, interaction- and land use scenarios

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Forests play an important role in the global climate system, and are themselves strongly affected by the changing climate. Forest dynamics do not only act at the stand scale, but are also influenced by larger scale drivers, such as landscape management, and by spatial interactions, such as fire spread or seed dispersal. Forest landscape models run on areas larger than a stand and interact spatially and thus are capable of taking into account these effects. We present the setup of the forest landscape model intercomparison CoFoLaMo (which is based on the setup of the ISI-MIP forest stand model comparison), where we examine several forest landscape models- LandClim, ForHyCS, TreeMig, LANDIS II and iLand - in terms of their usefulness for different kinds of applications. We compare the models with respect to their general approach, scales, resolution, and data requirements, processes, interactions, drivers, disturbances, outputs, and uncertainties. We run simulations in different test regions across temperate Europe, e.g., in the northern (Davos) and southern Alps (Valle d' Aosta), the Bavarian Forest and southern Italy (Puglia). Climate drivers (mostly daily T and P) are downscaled to 100 m resolution in the respective regions. For spinup and model testing we use past observed climate, extrapolated back to 1600 AD, for future simulations a set of different RCPs of different model chains from the ISI-MIP community. For model testing we use appropriate spatial forest data available for each region, ranging from NFI data, terrestrial vegetation type maps, or remote sensing derived forest types and high resolution canopy height. To address the landscape aspect of the models, we compare them in different scenarios of spatially interacting disturbances, spatial interactions by seed dispersal and land use.