Early Eocene simulations with three different palaeogeographic conditions

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The early Eocene is a warm period with a very high atmosphere CO₂ level in the Cenozoic. It provides a good reference for our future climate under the Representative Concentration Pathway 8.5 scenario. Therefore, the early Eocene climate has received many attentions in modeling studies, for example, the Deep-Time Model Intercomparison Project (DeepMIP). However, the early Eocene palaeogeographic conditions show remarkable contrasts to the present conditions. Meanwhile, there are a few different reconstructions for the early Eocene palaeogeography, which may cause further model spreads in simulating the early Eocene warm climate. Here, we present a series of experiments carried out with the NorESM1-F, under the framework of DeepMIP. In these experiments, we consider three different palaeogeographic reconstructions for the early Eocene. We also compare our simulations with climate proxy records, to validate which palaeogeographic reconstructions can reproduce simulations that agree better with the climate proxy records.