Aim. Improve the carbon sequestration predictions of Ecosystem Demography (ED2) model by constraining its parameters that control demographic processes using demographic data from inventory plots.

Study site. Setting and ecosystem composition of the Duke Forest.

Empirical succession mapping. Vectors showing how plots tend to move in space over time. [1]

ED2 model vs. Macrosystems data. Annual incremental diameter growth as predicted by ED2 vs estimates from joint distribution modeling. [2]

Gaussian process model to emulate ED2. (a) Bruteforce approach (b) Emulator approach [4] (c) Emulator construction on sufficient statistics surface.

ED2 model vs. Macrosystems data. Annual incremental diameter growth as predicted by ED2 vs estimates from joint distribution modeling. [2]