# Tracing tree species mixing effects from the stand to the tree level

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Abstract: Mixed-species forests can fulfill many forest functions and services better than pure stands and have received growing attention in forest science and practice. The presentation shows how in temperate forests mixing effects were traced from the stand to the tree level in order to better understand, model, and design mixed species production systems. It will be reported (i) to what extent mixed stands can overyield pure stands, (ii) how productivity gains or losses result from the size distribution and growth partitioning in mixed versus pure stands, (iii) how differences in the size distribution and growth partitioning are reflected in canopy space filling, (iv) how mixing can modify individual tree allometry, and (v) how mixing effects are influenced by the availability of different resources and climatic conditions, all of which can change spatially and temporally. Finally, the relevance causes, and consequences of the illustrated mixing reactions will be discussed. Perspectives and concepts of further research will be presented.

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