

# Recent Common Ancestors of Mankind

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## Abstract

We consider probabilistic questions arising from models of the common ancestry of all living humans. After reviewing analogous questions in genetic coalescent tree models where ancestry involves only one parent of each individual, we focus on genealogical networks, in which ancestry is defined through both parents. In a randomly mating population, the most recent common ancestor (MRCA) would have lived in the very recent past, a number of generations ago that is just logarithmic in the population size. However, the random mating model ignores aspects of population substructure, such as the tendency of individuals to choose mates from the same social group and the relative isolation of geographically separated groups. It turns out that recent common ancestors also emerge from certain models incorporating substantial population substructure, suggesting that the genealogies of all living humans may overlap in remarkable ways in the recent past. In these models, the MRCA of all present-day humans lived as recently as a few thousand years ago, and among all individuals living more than just a few thousand years before the MRCA, each present day human has exactly the same set of ancestors.