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Quebec H3A 2K6, Canada. *Top-down or bottom-up: A tale of correspondences.*

In this talk, we compare two random processes that start with isolated components and output a single connected entity. More precisely, tree-growth processes – a top-down construction– and discrete coalescents –a bottom-up construction.

The main subject is a correspondence between a non-binary tree representation of Kingman’s coalescent and recursive trees; both are uniform outputs in their respective combinatorial classes. Surprisingly, this instance of fragmentation/coagulation duality requires that we break the natural symmetry in coalescent processes, which contrasts with a well-know bijection between recursive trees and binary search trees (rotation correspondence).

We conclude by introducing a non-increasing tree-growth process that opens exciting avenues of research. This talk is based on joint work with Louigi Addario-Berry. (Received September 24, 2018)