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Olav Kallenberg* (kalleoh@auburn.edu), Department of Mathematics and Statistics, Parker Hall, Auburn, AL 36849. *Some discrete structures underlying Dawson-Watanabe superprocesses*. Preliminary report.

The Dawson-Watanabe superprocess is a measure-valued diffusion process ξ in \mathbb{R}^d arising as the scaling limit of a family of binary branching Brownian motions. For $d \geq 2$ and arbitrary $t > 0$, the random measure ξ_t is known to be diffuse and singular of Hausdorff dimension 2, and we may think of the process as a diffuse random cloud evolving randomly in time. Despite its continuous and fractal nature, the process can be analyzed in terms of some underlying discrete random structures. In this talk we consider a representation of the higher moment measures of ξ in terms of uniform random trees, and describe a related representation of the multi-variate Palm distributions. (Received August 13, 2008)