1121-60-13 **Laura Eslava*** (laura.eslavafernandez@mail.mcgill.ca), Department of Mathematics and Statistics, Burnside Hall, McGill University, Room 1005 – 805 Sherbrooke Street West, Montreal, Quebec H1X2B5, Canada. *Depth of high-degree vertices in Random Recursive Trees.* Preliminary report.

A random recursive tree T_n is constructed, recursively, by adding to T_{n-1} a new vertex labelled n attached to a uniformly chosen vertex in T_{n-1}; we start with T_1 being a single vertex labelled 1.

We will be concern with the degree and depth of a vertex i. Two known results for a uniformly chosen vertex in T_n is that its degree converges in distribution to a geometric r.v. with mean 1/2 and that its depth is normally asymptotic. On the other hand, the maximum degree Δ_n of T_n is known to satisfy the almost sure convergence $\Delta_n/\log n \to 1$; however, little was known about the properties of vertices with near-maximum degree.

In this talk we present an alternative construction of T_n which is based on Kingman's coalescent and is also related to the data structure tree known as 'Union-Find'. This gives us a new insight on both the degree and depth of its vertices.

Broadly speaking, we prove the asymptotic independent normality of the depth of vertices with near-maximum degree. More precisely, we describe the convergence (along suitable subsequences) of a marked point process where, for each vertex in T_n, we place a particle at its 'shifted-degree' and mark it with a renormalization of its depth. (Received June 16, 2016)