

# Oberseminar Mathematische Stochastik

Mittwoch, 16. September 2015, 17:00 Uhr, M 5

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## **And/or trees: a local limit point of view**

### *Abstract:*

I'll present a new and universal approach for the study of random and/or trees, unifying in one framework many different models, including some novel models, not yet understood in the literature.

An and/or tree is a Boolean expression represented in its tree shape. Fix an integer  $k$ , take a sequence of random (rooted) trees of increasing sizes and label each of these random trees uniformly at random in order to get a random Boolean expression on  $k$  variables.

I'll show that, under quite weak local conditions on the sequence of random trees we consider, the distribution induced on Boolean functions by this procedure converges to a limit distribution when the size of the tree tends to infinity.

I'll further exhibit two different behaviours of this limit distribution depending on the shape of the local limit of the underlying sequence of random trees: a degenerate case when the local limit has no leaves; and a non degenerate case, which can be described in more detail under stronger but reasonable conditions.

*The work is based on joint work with Nicolas Broutin (Inria Rocquencourt, Paris).*