

**Speaker**

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**Workshop**

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**Location and Date**

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**Title**

Asymptotics for the probability of labeled objects to be connected

**Abstract**

Let  $f_n$  be the counting sequence of a labeled combinatorial class and  $g_n$  be the number of connected objects of size  $n$  in the same class, so that their exponential generating series satisfy  $F(z) = \log(G(z))$ . We are interested in the asymptotic behavior of the probability  $p_n = g_n/f_n$ . It turns out that if  $f_n$  is growing sufficiently fast, then  $p_n$  converges to 1 and we can describe the coefficients  $h_i$  involved in the asymptotic expansion of  $p_n$  explicitly. In some cases, we can indicate other combinatorial objects that these coefficients count. Moreover, the asymptotic expansion of  $h_n/f_n$  can also be described.

This is ongoing work joint with Thierry Monteil.