

## Institut für Diskrete Mathematik

## **Combinatorics Seminar**

Friday 14th March 12:30

Online meeting (Webex)

## Optimal unimodular matching

## Laurent Ménard

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We consider sequences of finite weighted random graphs that converge locally to unimodular i.i.d. weighted random trees. Examples include sparse Erdos-Renyi random graphs and configuration models. When the weights are atomless, we prove that the matchings of maximal weight converge locally to a matching on the limiting tree. For this purpose, we introduce and study unimodular matchings on weighted unimodular random trees as well as a notion of optimality for these objects. In this context, we prove that, in law, there is a unique optimal unimodular matching for a given unimodular tree. We then prove that this law is the local limit of the sequence of matchings of maximal weight. Along the way, we also show that this law is characterised by an equation derived from a message passing algorithm.

Based on joint works with Nathanael Enriquez, Mike Liu and Vianney Perchet.

Meeting link:

https://tugraz.webex.com/tugraz/j.php?MTID=m01b0553e547155cca576e9d6e12f2c55

It is an associated event of the FWF SFB (F1002) "Discrete random structures: enumeration and scaling limits" (https://sfbrandom.univie.ac.at/).

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