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TREE ENUMERATION AND TREE STATISTICS

STEPHAN WAGNER

Institute of Discrete Mathematics, TU Graz, Austria and Department of Mathematics, Uppsala University, Sweden

This talk gives an overview of various types of trees and their exact and asymptotic enumeration. Both classical tree families (such as labelled trees, simply generated trees or recursive trees) and less familiar types of trees (for example, canonical trees or increasing trees with repetition) are considered, exhibiting the wide range of different models, their similarities and differences. Connections to other combinatorial structures and the analysis of different statistics that are commonly associated with trees will be discussed as well. Analytic tools based on generating functions are a recurring theme in this context.