Learning from Weakly Structured Information

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Online via Zoom
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The kick-off event of the presentation of the department's working groups will be an informal introduction to the research of the working group Foundations of Statistics and their Applications. In the first part of the talk, we discuss the opportunities and challenges of a general understanding of uncertainty and the use of sets of models (imprecise probabilities, partial identification) as the fundamental entity in statistical modelling. On the one hand, sets of models immediately allow a cautious treatment of 'big data uncertainty', like non-random missing patterns, complex measurement error, model imprecision and epistemically interpreted partial orders. On the other hand, sets of models promise to take powerfully advantage of partial domain knowledge that would be too weakly structured to justify the use of traditional probabilities. In the second part of the talk, we undertake a tour d'horizon of further current and planned research, ranging from formal concept analysis over decision and utility theory to ensemble methods.