

Mixed-integer nonlinear programming (MINLP) is concerned with finding optimal solutions to mathematical models of optimization problems combining discrete and nonlinear phenomena. All major optimization societies have identified MINLP as a "hot topic", which is reflected by an increasing number of workshops, minisymposia, invited talks, and major research projects.

This is partly due to the powerful modeling paradigm - many relevant practical decision problems in energy, engineering, economics, medicine, and systems biology can be formulated as a MINLP. But it is also a research area that by its very nature touches many areas of mathematics - geometry, analysis, algebra, stochastics, numerics, logic, complexity theory. The links are bidirectional. Most of the advances in MINLP stem from neighboring mathematical areas. And the research in MINLP theory and algorithms, as well as application of MINLP software to mathematical problems, have been resulting in deep mathematical insight.

Whereas other MINLP meetings usually focus on the important aspects of applications and algorithmic advances, we also want to identify and highlight links between MINLP and modern mathematics in the proposed workshop. The main aim of our workshop is to nurture the exchange of MINLP-related mathematical ideas and approaches across research and community areas.