History of Mathematics:
Models and Visualization in the Mathematical and Physical Sciences
Abstract

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This workshop brings together historians of mathematics and science as well as mathematicians to explore important historical developments connected with models and visual elements in the mathematical and physical sciences. It will address the larger question of what mathematicians mean by a model, a term that has been used in a variety of contexts, both within pure mathematics as well as in applications to other fields. Most of the talks will present case studies from the period 1800 to 1950 that deal with the modelling of analytical, geometrical, mechanical, astronomical, and physical phenomena. Some speakers will also show how computer-generated models and animations can be used to enhance visual understanding. This workshop will also consider the role of visual thinking as a component of mathematical creativity and understanding. For the period in view, we hope to form a provisional picture of how models and visual thinking shaped important historical developments.