

Computational Investigation of Structural Properties of Subtraction Games (I and II)

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During these two keynote talks, we analyze structural properties of subtraction games, using computational methodologies executed in massively-parallel high-performance computing environments. In particular, we explain how the study of individual subtraction games evolved into a comprehensive computational analysis of the structural properties of subtraction games, over a period of several years. Along the way, we will make connections between several areas of discrete mathematics. We will also share the computational infrastructure that was utilized, in the hopes that other combinatorial games could be studied in similar ways. This research is work-in-progress with students and faculty from several areas of mathematics. The team effort has been generously supported by AIM's Research Experiences for Undergraduate Faculty program.