Geometry That Counts

by

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Place: Seminar Room (207), Computer Engineering Building, GTU

All interested are cordially invited.

ABSTRACT:

Integer linear programs appear in a wide range of applications, but solving them is a computationally hard task. In fact, the problem of deciding if there exists a solution to an integer linear program is NP-complete. There are many different algorithms for attacking the problem, ranging from general methods to fine-tuned heuristics. Most of those algorithms are hard to understand and usually to implement.

Taking a geometric point of view on the problem, we present the feasibility and enumerating problem and an algorithm for solving it in an elementary way. The algorithm presented achieves good computational complexity and at the same time is easy to describe and understand.

BIOGRAPHY:

Zafeirakis Zafeirakopoulos is an assistant professor at the Institute of Information Technologies in Gebze Technical University. His research lies in the intersection of symbolic computation, algebraic combinatorics and high performance computing. He holds a B.Sc degree in Mathematics and an M.Sc in Computational Science from the National University of Athens (Greece) and a PhD from the Research Instute for Symbolic Computation of the Johannes Kepler University (Austria).