Representing polytopes: the Yannakakis theorem

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Resumo: In combinatorial optimization, efficiently representing polytopes as projections of simpler objects is a very useful tool. In 1991, a landmark result from Yannakakis revealed a surpirising connection between the existence of such representations and nonnegative matrix factorizations. This area has seen a renewed interest in recent years and in this talk we will give a general survey of the area and highlight some of the exciting new developments it has experienced.

palavras-chave: polytopes; extension complexity; nonnegative rank; combinatorial optimization.