THE DOLLAR GAME

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Prerequisites: Linear Algebra

Abstract. We discuss a graph theoretical problem known as the dollar game, which can be associated with any vector configuration on the vertices of a graph $G$. We then explain a remarkable combinatorial interpretation of the Laplacian matrix belonging to $G$ in the context of the dollar game. The Laplacian allows us to recast this graph theoretical problem in the language of linear algebra. Subsequently, we interpret the solutions of the dollar game as integer lattice points existing in a convex region in Euclidean space.

References