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The Lagrangian of a hypergraph and its application to extremal problems

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Abstract: In 1965 Motzkin and Straus established a connection between the maximum clique number and the Lagrangian of a graph, and provided a new proof of Turan's theorem. This new proof aroused interest in the study of Lagrangians of hypergraphs. In the 1980's, Frankl and Rodl disproved the well-known jumping constant conjecture of Erdos by using Lagrangians of hypergraphs as a tool. We present more applications of Lagrangians of hypergraphs in determining non-jumping numbers of hypergraphs. We also present some Motzkin-Straus type results for hypergraphs

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