

Multiplicative inequalities for cluster algebras of finite type

Daniel Soskin

Institute for Advanced Study

Totally positive matrices are matrices in which each minor is positive. Such matrices appear in various research studies and are well understood. Fomin and Zelevinsky described minimal collections of minors of a given matrix which form total positivity tests. Their work led to the development of cluster algebras theory, and in particular, the more general notion of total positivity. One of the longstanding problems about totally positive matrices is a characterization of determinantal inequalities which hold for all such matrices. A classical example of such inequalities are Hadamard inequality, Fischer inequality, and Kotljanskyy inequality. In my talk I will discuss a generalization of the problem of characterization of multiplicative inequalities to cluster algebras of finite type and provide full characterization of such inequalities in terms of Dynkin diagrams.

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