Kontsevich: Quivers, cluster varieties and integrable systems

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Quivers & mutations

Q 

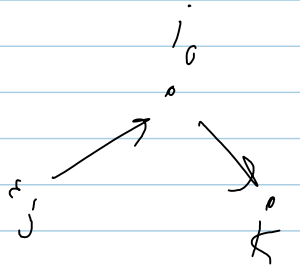
no 

no 

$I = \{\text{vertices}\}$

mutation: Pick a vertex $i_0 \in I$. Then

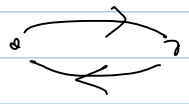
1. For each



$i \neq k,\ j, k \neq i_0$

add an arrow $j \to k$

2. Reverse all arrows attached to i_0

3. Remove all opposite pairs 

Demystification: Q with no opposite pairs is the same as a skew symmetric matrix $I \times I$.

$\Longleftrightarrow$ Lattice Γ, $\Lambda^2\Gamma \to \mathbb{Z}$, basis I of Γ

Mutation Replace the base I by another one [defined by a complicated procedure not obviously deserving of the name "demystification")