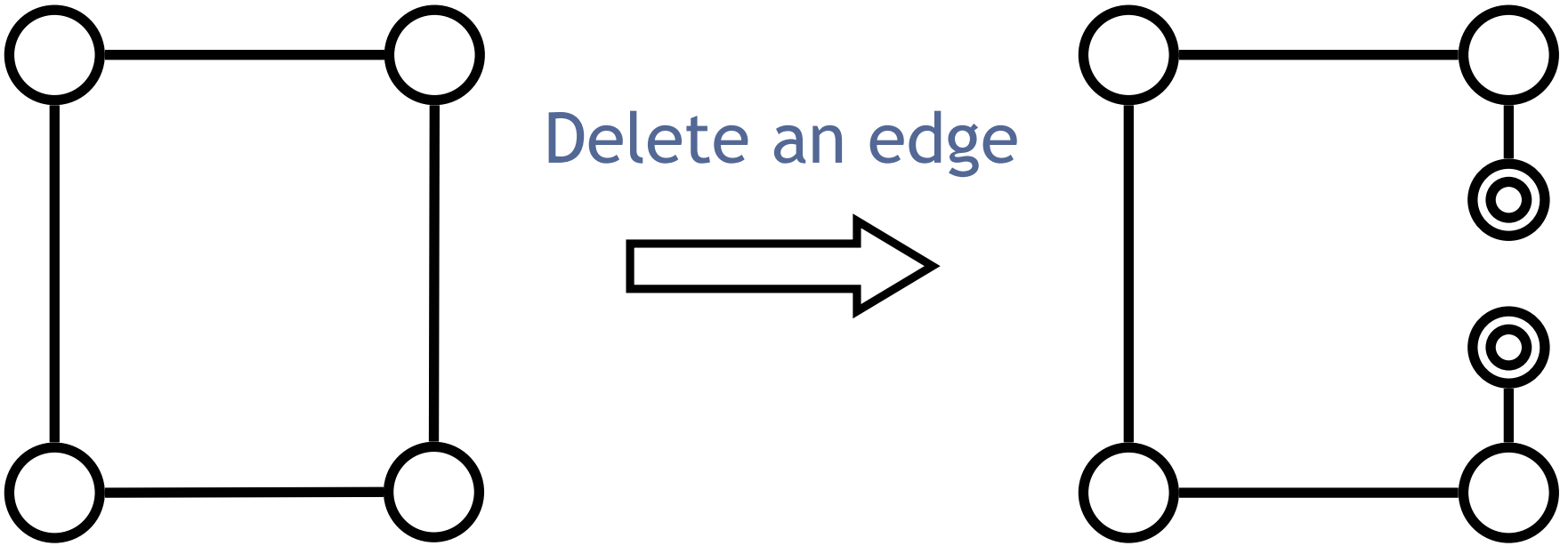
Approximating the Partition Function by Deleting Edges

Arthur Choi & Adnan Darwiche, UCLA



Model $\mathcal{M}$
Partition function Z

Model $\mathcal{M}'$
Partition function Z'

correct based
on deleted edges

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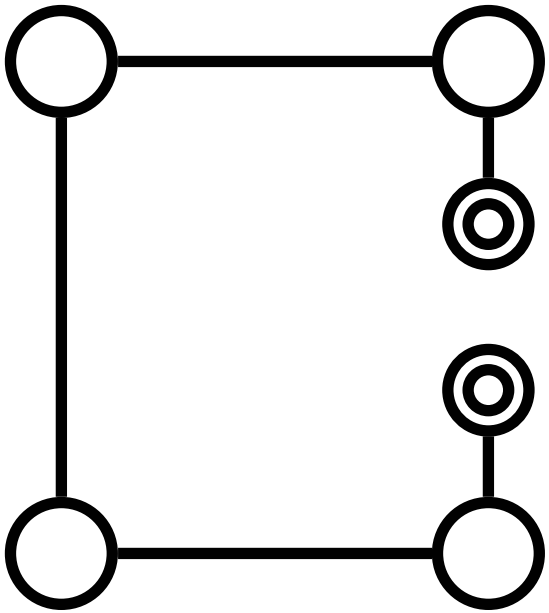
If simplified network is a tree …



marginals

IBP marginals [CD06]

Z' (correction I)

Bethe free energy

Z' (correction II)

improved approximations

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