# Using tensor networks to simulate concatenated bosonic codes

by Jean-Baptiste Bertrand

End Goal

Simulate system with *large* number off cavities
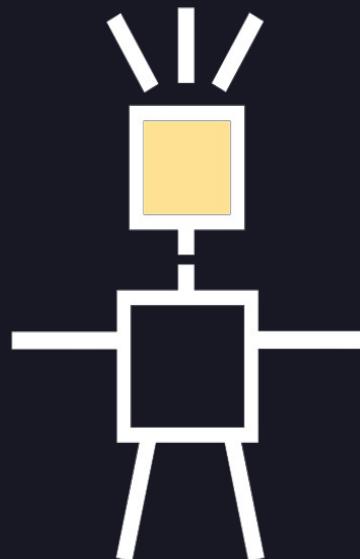
e.g. :
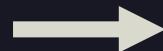
Means

Using the ITensors package to represent physical systems
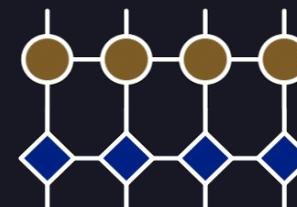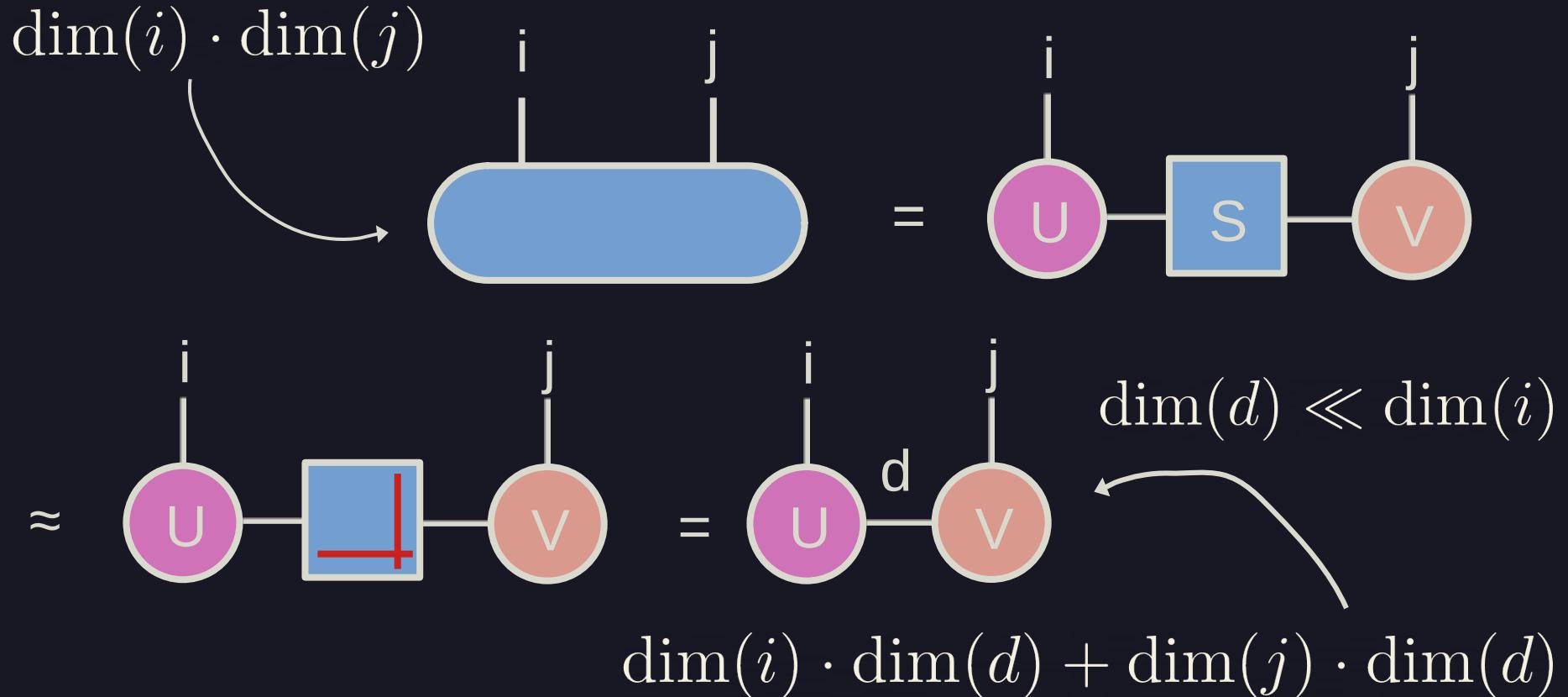
Why use tensor networks?

Great memory saving some techniques (e.g. SVD)

$$\dim(i) \cdot \dim(j)$$

$$\dim(d) \ll \dim(i)$$

$$\dim(i) \cdot \dim(d) + \dim(j) \cdot \dim(d)$$

Other means

Combine the use of tensor network with other thecnique (e.g. sBs basis)

$$\left[K_0^q \right]_{BP}$$