What if a particle turned into a tensor? Introduction to Tensor Networks

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Tensor Networks represent certain a class of quantum states (wave functions). They are typically used to approximate ground states of low-dimensional systems.
A brief description for non-specialists will be given in order to explain how to interpret the Tensor Networks in terms of strongly correlated many-body systems. I will try to avoid too many mathematical formulations focusing on the meaning and graphical interpretations of the Tensor Networks. As an example, simple magnetic systems with spin interactions will be discussed showing the advantages and weaknesses of the Tensor Networks. Possible extensions to fractals and curved surfaces will be shown.