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## Entanglement entropy by tensor renormalization group approach

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We present a general method to analyze the size dependence of entanglement entropy (EE) within the tensor renormalization group (TRG). Much attention has been paid to the TRG method since it does not suffer from the sign problem and enables us to take the large-volume limit easily. We represent the density matrix of a 1D quantum system as a 2D tensor network and develop a method to calculate the EE of any subsystem size. Applying this method to 1D quantum Ising model, we compute EE and show that the size dependence of EE agrees with the known result.

**Primary authors:** KADOH, Daisuke (Keio Univ.); TANAKA, Gota (Meiji Gakuin University); TAKEDA, Shinji (Kanazawa University); Mr HAYAZAKI, Takahiro (Kanazawa University)

**Presenter:** TANAKA, Gota (Meiji Gakuin University)

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