



Contribution ID: 151

Type: **Parallel Talk**

Application of the projective truncation and randomized singularvalue decomposition to a higher dimension.

Wednesday, 2 August 2023 10:00 (20 minutes)

We study the various tensor renormalization group (TRG), such as the Higher-order TRG (HOTRG), Anisotropic TRG (ATRG), Triad TRG, and Tensor network renormalization (TNR) with the idea of projective truncation and truncated singularvalue decomposition (SVD) such as the randomized SVD (RSVD). The details of the cost function for the isometry determine the precision, stability, and calculation time. In our study, we show calculation order improvement using RSVD. We also propose that the internal line respect for any TRG method improves the calculation without changing the order of the computational cost.

Topical area

Algorithms and Artificial Intelligence

Primary author: NAKAYAMA, Katsumasa (Riken)

Presenter: NAKAYAMA, Katsumasa (Riken)

Session Classification: Algorithms and Artificial Intelligence