

## CONVERGENCES OF LOGARITHMIC TRACE INEQUALITIES VIA GENERALIZED LIE-TROTTER FORMULAE

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Firstly we shall extend logarithmic trace inequalities shown by [4] and [2] by applying the method of log majorization [1] and an order preserving operator inequality [3].

Secondly we shall show generalized Lie-Trotter formulae which extend the original Lie-Trotter formula and  $\alpha$ -mean variant of the original Lie-Trotter formula in [4].

Finally by using this generalized Lie-Trotter formulae, we shall consider convergences of logarithmic trace inequalities as some extensions of the results in [4] and [2].

### References

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