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ON REVERSING OF THE MODIFIED YOUNG INEQUALITY

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This paper is dedicated to Professor Tsuyoshi Ando

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ABSTRACT. In the present paper, by Haagerup theorem, we show that if $A \in \mathbb{M}_n$ is a non scalar strictly positive matrix and $0 < \nu < 1$ be a real number such that $\nu \neq \frac{1}{2}$, then there exists $X \in \mathbb{M}_n$ such that

$$\|A^\nu X A^{1-\nu}\| > \|\nu AX + (1 - \nu)XA\|.$$

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