ON THE NUMERICAL RANGE AND OPERATOR NORM OF V^2

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Abstract. Let V denote the classical Volterra operator on $L^2(0,1)$. We investigate the numerical range and operator norm of V^2. In particular, we obtain the numerical range, numerical radius and norm of $\mathrm{Re}V^2$ and $\mathrm{Im}V^2$.

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REFERENCES

[1] E. BRIAN DAVIES, *Linear Operators and Their Spectra*, Cambridge Studies in Advanced Mathematics, Cambridge Univiversity Press, **106**, 2007.
[2] P. R. HALMOS, *A Hilbert Space Problem Book*, Springer-Verlag New York Inc., 1982.
[3] R. A. HORN AND C. R. JOHNSON, *Topics in Matrix Analysis*, Cambridge University Press, 1991.
[4] L. KHADKHUU AND D. TSEDENBAYAR, *On the numerical range and numerical radius of the Volterra operator*, The Bulletin of Irkutsk State University, Mathematics, **24**, (2018), 102–108.

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