

AN INEQUALITY FOR INTEGRALS OF THE FORM $\int_x^\infty f(t)e^{it} dt$

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Abstract. It is shown that for a completely monotonic function f , the absolute value of $\int_x^\infty f(t)e^{it} dt$ is not greater than $f(x)$.

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REFERENCES

- [1] HORST ALZER AND CHRISTIAN BERG, *Some classes of completely monotonic functions II*, Ramanujan J. **11** (2006), 225–248.
- [2] R. B. BURCKEL, *An Introduction to Classical Complex Analysis*, vol. 1, Academic & Press (1979).
- [3] A. ERDÉLYI, W. MAGNUS, F. OBERHETTINGER AND F. G. TRICOMI, *Higher Transcendental Functions*, vol. II, McGraw-Hill (1953).
- [4] GRAHAM JAMESON, NICK LORD AND JAMES MCKEE, *An inequality for Si(x)*, Math. Gazette **99** (2015), 133–139.
- [5] D. V. WIDDER, *The Laplace Transform*, Princeton Univ. Press (1946).