Title: Polarization constants for products of linear functionals over $\mathbb{R}^2$ and $\mathbb{C}^2$ and Chebyshev constants of the unit sphere

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The topic of this work is the estimation of the *linear polarization constant* of normed spaces. In finite dimensional Hilbert spaces we study the linear polarization constant and the *Chebyshev constant*. By constructing certain generalized trigonometric functions, our investigation leads to the connection of the polarization constant on a 2-dimensional complex Hilbert space and the Chebyshev constant of S^2. This provides estimates for the nth polarization constants. Our main result is asymptotically best possible.

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