Abstract

For a given $q \in \mathbb{C}$ with $|q| \le 1$, we study the C-numerical range of a Hilbert space operator where C is an operator of the form
$$\left(\begin{array}{cc} qI_n & \sqrt{1-|q|^2}I_n \\ 0_n & 0_n \end{array} \right) \oplus 0.$$
Some known results on the q-numerical range are extended to this set.