Conditionally positive definite operators

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Suppose that $\mathcal{H}$ is a complex Hilbert space. We call a bounded operator T in $\mathcal{H}$ *conditionally positive definite* if the sequence $\{\|T^n h\|^2\}_{n=0}^{\infty}$ is conditionally positive definite for every $h \in \mathcal{H}$. This class of operators contains subnormal operators, 2- and 3- isometries and much more beyond them and is related to the class of complete hypercontractions of order 2 introduced by Chavan and Sholapurkar. In the talk we discuss some properties of the above mentioned operators.

The talk is based on joint work with I.B. Jung and J. Stochel.