1025-47-9 **Morteza Seddighin*** (mseddigh@indiana.edu), Indiana University East, 2325 Chester BLVD, Richmond, IN 47374. *Generalizing Holder McCarthy inequality to Normal Operators using Convex Optimization.* Preliminary report.

We use convex optimization techniques to generalize Hölder-McCarthy inequality. Let A be a positive operator on a Hilbert space H satisfying $M \geq A \geq m > 0$. Also let $f(t)$ be a real valued convex function on $[m, M]$ and q be a real number, then the inequality

$$(f(A)x, x) \leq \frac{(mf(M) - Mf(m))}{(q-1)(M-m)} \left(\frac{(q-1)\,(f(M) - f(m))}{q\,(mf(M) - Mf(m))} \right)^q (Ax, x)^q,$$

which holds for every vector x, under certain restrictions on f and q , is called the Hölder-McCarthy inequality. We will generalize the Hölder-McCarthy inequality from positive operators to accretive normal operators. (Received October 26, 2006)