The $\bar{\partial}$-Neumann operator and cancellation of singularities on the bi-disk.

Abstract

The $\bar{\partial}$-Neumann operator, N, has been used to obtain a solution to the $\bar{\partial}$-problem, giving a solution u, of minimal L^2-norm to the equation $\bar{\partial}u = f$. We look at a sequence of operators which converge to the $\bar{\partial}$-Neumann operator on the bi-disk. The sequence is unbounded in Sobolev norms. We also consider the operator $\bar{\partial}^*$ applied to the sequence, which gives a solution to the $\bar{\partial}$-problem, and show the new sequence is bounded in Sobolev norms.