1086-32-563 **Friedrich Haslinger*** (friedrich.haslinger@univie.ac.at), Fakultaet fuer Mathematik, Nordbergstr. 15, A-1090 Vienna, Austria. *Spectral properties of the $\overline{\partial}$-Neumann operator.*

We consider the $\overline{\partial}$-Neumann operator

$$N : L^2_{(0,q)}(\Omega) \longrightarrow L^2_{(0,q)}(\Omega),$$

where $\Omega \subset \mathbb{C}^n$ is bounded pseudoconvex domain, and

$$N_\varphi : L^2_{(0,q)}(\Omega, e^{-\varphi}) \longrightarrow L^2_{(0,q)}(\Omega, e^{-\varphi}),$$

where $\Omega \subseteq \mathbb{C}^n$ is a pseudoconvex domain and φ is a plurisubharmonic weight function.

Using a general description of precompact subsets in L^2-spaces we obtain a characterization of compactness of the $\overline{\partial}$-Neumann operator, which can be applied to related questions about Schrödinger operators with magnetic field and Pauli and Dirac operators and to the complex Witten Laplacian.

In addition we discuss obstructions to compactness of the $\overline{\partial}$-Neumann operator. (Received September 07, 2012)