1147-32-75   **Friedrich Haslinger*** (`friedrich.haslinger@univie.ac.at`), Faculty of Mathematics, University of Vienna, Oskar-Morgenstern-Platz 1, A-1090 Vienna, Austria. *The ∂-complex on the Segal-Bargmann space.*

We use the powerful classical methods of the $\overline{\partial}$-complex based on the theory of unbounded densely defined operators on Hilbert spaces to study certain densely defined unbounded operators on the Segal-Bargmann space. These are the annihilation and creation operators of quantum mechanics. In several complex variables we have the ∂-operator and its adjoint ∂^* acting on $(p,0)$-forms with coefficients in the Segal-Bargmann space. We consider the corresponding ∂-complex and study spectral properties of the corresponding complex Laplacian $\tilde{\Box} = \partial\partial^* + \partial^*\partial$. In addition, we study a more general complex Laplacian $\tilde{\Box}_D = DD^* + D^*D$, where D is a differential operator of polynomial type, to find the canonical solutions to the inhomogeneous equations $Du = \alpha$ and $D^*v = \beta$. (Received November 30, 2018)