

## 第01回

- 講演者： **Wolfram Bauer** 氏（学振□□□）
  - 題目□ Hankel operators on the Segal-Bargmann space and  $\Psi^*$ -algebras by commutator methods
  - 日時：平成18年4月13日（木）16:00～17:00

For the Segal-Bargmann space  $H^2(\mathbb{C}^n, \mu)$  of Gaussian square integrable entire functions on  $\mathbb{C}^n$  we consider Hankel operators  $H_f$  with  $f$  in a symbol space  $\mathcal{T}(\mathbb{C}^n)$ . We define the Berezin transform for operators on  $H^2(\mathbb{C}^n, \mu)$  and in terms of the *mean oscillation* of  $f$  we give necessary and sufficient conditions for  $H_f$  and  $H_{\bar{f}}$  to be bounded, compact or to belong to the *von Neumann Schatten class*  $\mathcal{S}_p$  for  $1 \leq p < \infty$ . We compare some aspects of these results to the case of Bergman spaces over bounded symmetric domains.

There are close relations to the boundedness of the commutator  $[P, M_f]$  where  $P$  denotes the Toeplitz projection and  $M_f$  is the multiplication by  $f$ . We describe how to construct spectral invariant Fréchet operator algebras  $(\Psi_k^\Delta)_k$  with prescribed properties in  $\mathcal{L}(H^2(\mathbb{C}^n, \mu))$  similar to the Hörmander classes  $\Psi_{\rho, \delta}^0$  of zero-order pseudo-differential operators. Following general ideas by B. Gramsch we are using commutator methods and finite systems  $\Delta$  of closed operators. With  $\Delta$  in a class of vector fields on  $\mathbb{C}^n$  this construction leads to algebras localized in cones  $\mathcal{C} \subset \mathbb{C}^n$  and containing the Segal-Bargmann projection.



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6 images

[PDF bauer.pdf](#)

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