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**MR1770752 (2001h:81121)****[Hall, Brian C.](#)** ([1-NDM](#))**Holomorphic methods in analysis and mathematical physics.***First Summer School in Analysis and Mathematical Physics (Cuernavaca Morelos, 1998)*, 1–59, *Contemp. Math.*, 260, Amer. Math. Soc., Providence, RI, 2000.[81S05](#) ([22E30](#) [32A36](#) [46E22](#) [46N50](#) [81S30](#))

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This paper is a very readable introductory account of the following topics: (1) Hilbert spaces of holomorphic functions; in particular, Bergman spaces and the Segal-Bargmann (or Fock) space of entire functions on  $\mathbf{C}^n$  that are in  $L^2$  of a Gaussian measure. (2) The mathematical setup of quantum mechanics; in particular, the canonical commutation relations, their realizations as position-momentum or creation-annihilation operators, the Segal-Bargmann transform that intertwines the two realizations, and related aspects of quantization theory. (3) The recent work of the author and others on analogues of the Segal-Bargmann transform for compact Lie groups. Based on a series of lectures by the author, the paper is written at a level accessible to graduate students, and it includes some exercises at the end of each section.

{For the entire collection see [MR 2001b:00027](#)}

**Reviewed** by [Gerald B. Folland](#)

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