

H -infinity control. Nevertheless the book is a good introduction into an active area of research and the reader who is willing to invest some time and effort should be well rewarded.

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Operators and representation theory: Canonical models for algebras of operators arising in quantum mechanics, by P. E. T. Jorgensen. North-Holland Mathematics Studies, vol. 147, North-Holland, Amsterdam, 1988, viii+338 pp., Dfl. 175.00. ISBN 0-444-70321-7

The subtitle of the book under review is *Canonical models for algebras of operators arising in quantum mechanics*. In the preface, the author states that he has “picked certain subjects from the theory of operator algebras, and from representation theory, and showed that they may be developed starting with Lie algebras, extensions, and projective representations.” The distinctive point of view arises from the consideration of algebras of *unbounded* operators, which fall outside the usual theory of C^* algebras and von Neumann algebras. Analytic properties of these operators, such as essential self-adjointness, are treated using spaces of C^∞ and analytic vectors for an appropriate Lie group action.

The basic operator of interest here is the Hamiltonian (total energy) operator H of a quantum-mechanical system. The problem is to determine the spectrum and (generalized) eigenvector decomposition of this self-adjoint operator. In Sophus Lie’s creation of