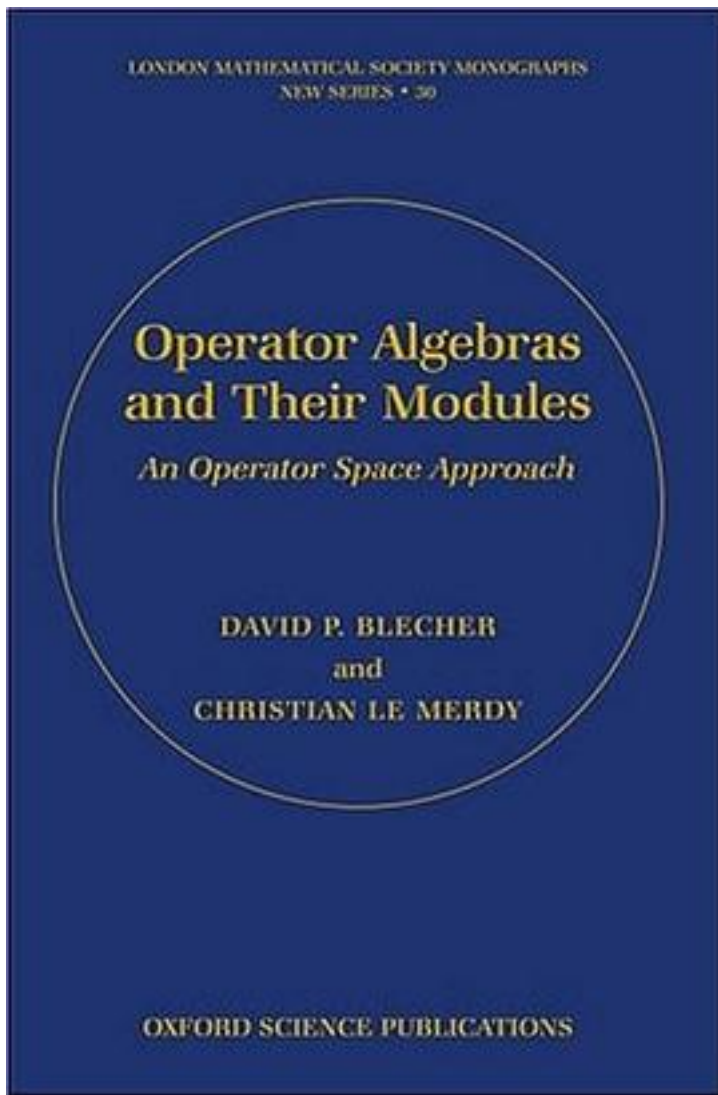


Operator Algebras and Their Modules



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This invaluable reference is the first to present the general theory of algebras of operators on a Hilbert space, and the modules over such algebras. The new theory of operator spaces is presented early on and the text assembles the basic concepts, theory and methodologies needed to equip a beginning researcher in this area. A major trend in modern mathematics, inspired largely by physics, is toward 'noncommutative' or 'quantized' phenomena. In functional analysis, this has appeared notably under the name of 'operator spaces', which is a variant of Banach spaces which is particularly appropriate for solving problems concerning spaces or algebras of operators on Hilbert space arising in 'noncommutative mathematics'. The category of operator spaces includes operator algebras, selfadjoint (that is, C^* -algebras) or otherwise. Also, most of the important modules over operator algebras are operator spaces. A common treatment of the subjects of C^* -algebras, nonselfadjoint operator algebras, and modules over such algebras (such as Hilbert C^* -modules), together under the umbrella of operator space theory, is the main topic of the book. A general theory of operator algebras, and their modules, naturally develops out of the operator space methodology. Indeed, operator space theory is a sensitive enough medium to reflect accurately many important noncommutative phenomena. Using recent advances in the field, the book shows how the underlying operator space structure captures, very precisely, the profound relations between the algebraic and the functional analytic structures involved. The rich interplay between spectral theory, operator theory, C^* -algebra and von Neumann algebra techniques, and the influx of important ideas from related disciplines, such as pure algebra, Banach space theory, Banach algebras, and abstract function theory is highlighted. Each chapter ends with a lengthy section of notes containing a wealth of additional information.

作者介绍:

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