

一类无穷维Hamilton算子的谱估计

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Estimation of the Spectrum of a Class of Infinite Dimensional Hamiltonian Operators

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摘要 研究了一类无穷维Hamilton算子近似点谱的范围. 进而, 当此类无穷维Hamilton算子是辛自伴算子时, 给出了它的谱范围. 并刻画了分块对角算子的近似点谱. 最后举例说明了判别准则的有效性.

关键词: 无穷维Hamilton算子 谱 近似点谱 辛自伴

Abstract: In this paper, the range of approximate point spectrum of a class of infinite dimensional Hamiltonian operators is studied. Furthermore, the range of spectrum of the class of infinite dimensional Hamiltonian operators which are symplectic adjoint operators is estimated. The approximate point spectrum of diagonal block operators is also obtained. In the end, a concrete example is constructed to illustrate the effectiveness of the criterions.

Key words: infinite dimensional Hamiltonian operator spectrum approximate point spectrum symplectic adjoint


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- [1] 范小英, 阿拉坦仓. 一类非负无穷维Hamilton算子的谱分布及其可逆性. 应用数学学报, 2009, 32(1): 14-18 (Fan X Y, Alataancang. Spectral Distribution and Invertibility of a Class of Nonnegative Hamiltonian Operators. Acta Mathematicae Applicatae Sinica, 2009, 32(1): 14-18) 浏览
- [2] 吴德玉, 阿拉坦仓. 无穷维Hamilton算子的可逆性及其应用. 中国科学, 数学, 2010, 40(9): 921-928 (Wu D Y, Alataancang. Invertibility of Infinite Dimensional Hamiltonian Operator and Its Applications. Science in China (Mathematics), 2010, 40(9): 921-928)
- [3] 范小英, 阿拉坦仓. 一类非负无穷维Hamilton算子的谱刻画及其可逆性. 系统科学与数学, 2011, 31(1): 57-64 (Fan X Y, Alataancang. Spectrum and Invertibility of a Class of Infinite Dimensional Hamiltonian Operators. Journal of Systems Science and Mathematical Sciences, 2011, 31(1): 57-64)
- [4] Hou G L, Alataancang. Completeness of Eigenfunction Systems for Off-diagonal Infinite-dimensional Hamiltonian Operators. Communications in Theoretical Physics, 2010, 53(2): 237-241 

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- [5] Alatancang, W D Y. Completeness in the Sense of Cauchy Principal Value of the Eigenfunction Systems of Infinite Dimensional Hamiltonian Operator. *Science in China Series A: Mathematics*, 2009, 52(1): 173-180
- [6] 阿拉坦仓, 黄俊杰. 无穷维Hamilton算子谱及其相关问题研究. 数学进展, 2009, 38(2): 129-145 (Alatancang, H J J. On Spectrum and Related Problems of Infinite Dimensional Hamiltonian Operators. *Advances in Mathematics*, 2009, 38(2): 129-145)
- [7] Alatancang, H J J, F X Y. Structure of the Spectrum of Infinite Dimensional Hamiltonian Operators. *Science in China Series A: Mathematics*, 2008, 51(5): 915-924 
- [1] 郑召文, 胡玉峰. 具有中间亏指数的线性哈密顿算子的点谱[J]. 应用数学学报, 2013, 36(3): 431-438.
- [2] 额布日力吐, 阿拉坦仓. 一类Hamilton算子的谱分布及其可逆性[J]. 应用数学学报, 2012, (6): 1113-1119.
- [3] 陈文德. k 维 q 元线性码的重量谱的分类[J]. 应用数学学报, 2012, 35(5): 918-927.
- [4] 李丽, 黄振友. 逆谱理论新方法中A-函数和势函数依赖关系的稳定性研究[J]. 应用数学学报, 2012, (4): 577-585.
- [5] 吴德玉, 阿拉坦仓. 无穷维Hamilton算子的辛自伴性[J]. 应用数学学报, 2011, 34(5): 918-923.
- [6] 汪政红, 余伟, 陈文德. 3维11元线性码的重量谱[J]. 应用数学学报, 2010, 33(4): 702-709.
- [7] 迟晓丽, 向新民. 非线性KdV-Schrödinger方程Fourier谱逼近的大时间性态[J]. 应用数学学报, 2010, 33(2): 348-362.
- [8] 张澜, 阿拉坦仓. 一类缺项算子矩阵的谱扰动[J]. 应用数学学报, 2010, 33(1): 59-65.
- [9] 范小英. 一类非负Hamilton算子的谱分布及其可逆性[J]. 应用数学学报, 2009, 32(1): 14-18.
- [10] 阎爱玲, 修乃华. 欧几里德若当代数向量优化问题的谱标量化[J]. 应用数学学报, 2008, 31(5): 940-952.
- [11] 谌德, 向新民. 广义BBM方程有理Chebyshev谱逼近的大时间性态[J]. 应用数学学报, 2006, 29(2): 311-325.
- [12] 梁宗旗. 广义混合非线性Schrödinger方程的拟谱方法[J]. 应用数学学报, 2005, 28(4): 598-615.
- [13] 郭曙光. 边无关数为 q 的 n 阶树的谱半径的第二大值[J]. 应用数学学报, 2003, 26(4): 745-751.
- [14] 向新民, 顾绍泉. 带五次项的NLS方程及其谱逼近的整体吸引子的维数估计[J]. 应用数学学报, 2003, 26(4): 664-674.
- [15] 尚亚东, 郭柏灵. 广义对称正则长波方程的勒让德和切贝雪夫拟谱方法[J]. 应用数学学报, 2003, 26(4): 590-605.