

WEAK ASYMPTOTIC HOMOMORPHISM PROPERTY FOR MASAS IN SEMIFINITE FACTORS

KUNAL K. MUKHERJEE

Abstract. The notion of weak asymptotic homomorphism property for masas in semifinite factors is defined and is shown to be equivalent to singularity. The analysis shows that weak asymptotic homomorphism property is a ‘spectral phenomenon’.

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REFERENCES

- [1] CHARLES A. AKEMANN AND DAVID SHERMAN, *Conditional expectation onto maximal abelian *-subalgebras*, preprint: arXiv: 0906.1831, 2010.
- [2] J. T. CHANG AND D. POLLARD, *Conditioning as disintegration*, Statist. Neerlandica **51**, 1 (1997), 287–317.
- [3] J. DIXMIER, *Sous-anneaux abéliens maximaux dans les facteurs de type fini*, Ann. of Math. (2) **59**, (1954), 279–286.
- [4] KENNETH J. DYKEMA, ALLAN M. SINCLAIR, AND ROGER R. SMITH, *Values of the Pukánszky invariant in free group factors and the hyperfinite factor*, J. Funct. Anal. **240**, 2 (2006), 373–398.
- [5] JUNSHENG FANG, MINGCHU GAO, AND ROGER R. SMITH, *The relative weak asymptotic homomorphism property for inclusions of finite von neumann algebras*, Internat. J. Math. **22**, 7 (2011), 991–1011.
- [6] JUNSHENG FANG, ROGER R. SMITH, STUART A. WHITE, AND ALAN D. WIGGINS, *Groupoid normalizers of tensor products*, J. Funct. Anal. **258**, 1 (2010), 20–49.
- [7] RICHARD V. KADISON AND JOHN R. RINGROSE, *Fundamentals of the theory of operator algebras. Vol. II*, American Mathematical Society, volume **16**, Providence, RI, 1997.
- [8] ROBERTO LONGO, *Maximal abelian subalgebras with simple normalizer*, Proc. Amer. Math. Soc. **107**, 1 (1989), 165–168.
- [9] KUNAL MUKHERJEE, *Masas and Bimodule Decompositions of II_1 Factors*, Q.J. Math. **62**, 2 (2011), 451–486.
- [10] SORIN POPA, *Notes on Cartan subalgebras in type II_1 factors*, Math. Scand. **57**, 1 (1985), 171–188.
- [11] SORIN POPA AND DIMITRI SHLYAKHTENKO, *Cartan subalgebras and bimodule decompositions of II_1 factors*, Math. Scand. **92**, 1 (2003), 93–102.
- [12] C. E. SILVA, *Invitation to ergodic theory*, American Mathematical Society, volume **42**, Providence, RI, 2008.
- [13] ALLAN M. SINCLAIR AND ROGER R. SMITH, *Finite von Neumann algebras and masas*, London Mathematical Society Lecture Note Series, volume **351**, Cambridge University Press, Cambridge, 2008.
- [14] ALLAN M. SINCLAIR, ROGER R. SMITH, STUART A. WHITE, AND ALAN WIGGINS, *Strong singularity of singular masas in II_1 factors*, Illinois J. Math., **51**, 4 (2007), 1077–1084.
- [15] ȘERBAN STRĂTILĂ, *Modular theory in operator algebras*, Editura Academiei Republicii Socialiste România, Bucharest, 1981.