(OZAWA, Narutaka)

A.

2011　　　Banach

1.　　　　　Banach

　　　　　　　　　　Banach
　　　　　　　　　　Banach

2.

　　　　　　　　　　　Higson–
Roe

　　　Dranishnikov & Sapir

　　　Thompson

3.　　　　　　　R　　$R =$
span R^2

N. Monod　EPFL　　　A. Thom　Leipzig
　　　　　　　　R

　　　Kaplansky

　　　　　　　　Wiegold

In the academic year 2011, N. Ozawa tried to solve longstanding problems in various subjects. (1): When B.E. Johnson initiated the systematic study of homological aspects of Banach algebras, he asked whether every *contractible* Banach algebra is necessarily finite-dimensional. I proved it is the case if the contractible Banach algebra A admits a faithful action on a Banach space V with the uniform approximation property. This result generalizes a theorem of Paulsen and Smith who proved the same in the case V being a Hilbert space. (2): It is a well-known result of Higson and Roe that a coarse metric space X with finite *asymptotic dimension* is coarsely amenable. I generalized this by proving that the same conclusion still holds if X has subexponential asymptotic dimension growth. This answers a problem raised by Dranishnikov and Sapir, and may have something to do with the famous problem whether Thompson's group F is amenable. (3): A *rng* is a ring which may not have a unit. A rng R is said to be an *irng* if it is *idempotent*, i.e., $R = \operatorname{span} R^2$. In a joint work with N. Monod (EPFL) and A. Thom (Leipzig), I studied the problem whether every finitely generated irng is singly generated as an ideal. It is proved to be the case for commutative rngs (Kaplansky's theorem), finite rngs and semigroup rngs. This problem has a close connection to the Wiegold problem in group theory.

B.

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2. N. Ozawa and S. Popa; "On a class of II$_1$ factors with at most one Cartan subalgebra," Ann. of Math. (2), **172** (2010), 713–749.

3. N. Ozawa and S. Popa; "On a class of II$_1$ factors with at most one Cartan subalgebra II," Amer. J. Math., **132** (2010), 841–866.

4. N. Monod and N. Ozawa; "The Dixmier problem, lamplighters and Burnside groups," J. Funct. Anal., **258** (2010), 255–259.

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6. M. Burger, N. Ozawa and A. Thom; "On Ulam stability," Israel J. Math., accepted.

7. N. Ozawa; "Examples of groups which are not weakly amenable," Kyoto J. Math., **52** (2012), 333–344.

8. N. Ozawa; "Metric spaces with subexponential asymptotic dimension growth," Internat. J. Algebra Comput., accepted.

9. N. Ozawa; "A remark on contractible Banach algebras," Kyushu J. Math., accepted.

10. N. Monod, N. Ozawa and A. Thom, "Is an irng singly generated as an ideal?" Internat. J. Algebra Comput., accepted.

C.

1. *Quasi-homomorphism rigidity with noncommutative targets*; (1) Rigidity in cohomology, K-theory, geometry and ergodic theory, HIM (Bonn), November 09. (2) Colloquium at University of Hawaii, March 10. (3) Danish-Norwegian Operator Algebra Seminar, Copenhagen, April 10. (4) Geometry and Ergodic Theory Seminar, EPFL, April 10. (5) Recent Developments in Operator Algebras, , June 10. (6) Satellite Conference on Operator Algebras to ICM 2010, IMSc (Chennai), August 10. (7) Séminaire d'Algèbres d'Opérateurs, Institut de Mathématiques de Jussieu, September 10. (8) AMS Fall Western Section Meeting, UCLA, October 10.

2. *Survey on weak amenability for groups*; (1) Japanese Western Operator Algebra Seminar, Awarayunomachi, December 10. (2) Finite Dimensional Approximations of Discrete Groups, Oberwolfach, May 11. (3)II$_1$ factors: rigidity, symmetries and classification, IHP (Paris), May 11. (4) Workshop in Analysis and Probability, Texas A&M University, July 11. (5) Banach Algebras 2011, Waterloo, August 11. (6) C*-Algebras and Related Topics, RIMS, September 11. (7) von Neumann Algebras and Related Topics, RIMS, January 12.

3. *Weak amenability for groups and its applications (Mini Course)*; (1) Von Neumann algebras and ergodic theory of group actions, IHP (Paris), May 11. (2) Winter School on Operator Algebras, RIMS, December 11.

D.

B   2
ℕ   Stone–Čech

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F.

　1.　　　　　　　 Groups, Geometry, and Dynam-
　　ics　　 editor.

　2.

　　　　　　　　　　　　　　 co-organizer

G.

　1. ICM　　　　　　 (Operator Algebras and
　　Functional Analysis), 2006　 8　 .

　2.　　　 (　　　　), 2009　 4　 .

　3.　　　　　　　　 , 2010　 3　 .