(KAWAHIGASHI Yasuyuki)

A.

S. Carpi, R. Longo   super conformal field theory

        Super Virasoro algebra   central charge   3/2

                                super Virasoro net
    coset net
                super conformal net

        Gannon-Walton   modular invariant

We have studied operator algebraic approach to super conformal field theory with S. Carpi and R. Longo. It is known that the super Virasoro algebras have discrete series of representations for central charges less than 3/2. We have realized the super Virasoro nets of operator algebras for these cases as coset nets and obtained a classification result by studying their extensions. Together with general theory we have established, we also use the classification technique of modular invariants given by Gannon and Walton.

B.

1. Y. Kawahigashi: "Generalized Longo-Rehren subfactors and α-induction", Commun. Math. Phys. **226** (2002) 269–287.

2. Y. Kawahigashi and R. Longo: "Classification of local conformal nets: Case $c < 1$", Ann. of Math. **160** (2004) 493–522.

3. Y. Kawahigashi, N. Sato and M. Wakui: "$(2+1)$-dimensional topological quantum field theory from subfactors and Dehn surgery formula for 3-manifold invariants", Adv. Math. **195** (2005) 165–204.

4. Y. Kawahigashi: "Classification of operator algebraic conformal field theories", in "Advances in Quantum Dynamics", Contemp. Math. **335** (2003) 183–193.

5. Y. Kawahigashi and R. Longo: "Classification of two-dimensional local conformal nets with $c < 1$ and 2-cohomology vanishing for tensor categories, Commun. Math. Phys. **244** (2004) 63–97.

6. Y. Kawahigashi: "Topological quantum field theories and operator algebras", in "Quantum Field Theory and Noncommutative Geometry", Lect. Notes in Phys. **662**, Springer Verlag, (2005) 241–253.

7. Y. Kawahigashi: "Classification of operator algebraic conformal field theories in dimensions one and two", in "XIVth International Congress on Mathematical Physics", World Scientific (2005) 476–485.

8. Y. Kawahigashi and R. Longo: "Noncommutative spectral invariants and black hole entropy", Commun. Math. Phys. **257** (2005) 193–225.

9. Y. Kawahigashi and R. Longo: "Local conformal nets arising from framed vertex operator algebras", Adv. Math. **206** (2006) 729–751.

10. Y. Kawahigashi, R. Longo, U. Pennig and K.-H. Rehren: "Classification of non-local chiral CFT with $c < 1$", to appear in Commun. Math. Phys.

C.

1. Operator algebras and Moonshine, "Probabilistic Operator Algebra Seminar", University of California, Berkeley (U.S.A.), March 2006.

2. Conformal field theory and operator algebras, "Generalized McKay correspondences and representation theory", MSRI (U.S.A.), March 2006.

3. Local conformal nets and their representation theory (three talks), "Infinite Dimensional Lie Algebras and Local von Neumann Algebras in CFT", Banff International Research Station (Canada), May 2006.

4. Operator algebras and conformal field theory, "The XVth International Colloquium

on Integrable Systems and Quantum Symmetries", Prague (Czech), June 2006.

5. Operator algebras and boundary CFT, "The 21st International Conference on Operator Theory", Timişoara (Romania), July 2006.

6. Conformal field theory and operator algebra, "International Congress on Mathematical Physics - ICMP 2006" (Plenary talk), Rio de Janeiro (Brazil), August 2006.

7. Superconformal nets of factors and their classification, "Topics on von Neumann algebras", Banff International Research Station (Canada), September 2006.

8. Conformal field theory and operator algebras, "MSJ-IHES Joint Workshop on Noncommutativity", IHES (France), November 2006.

9. Superconformal nets of factors and their classification, "Recent Advances in Operator Algebras", Rome (Italy), November 2006.

10. Superconformal field theory and operator algebras, "Operator Algebras and Related Fields", Hawaii (U.S.A.), January 2007.

D.

1. VI II: Fourier
(3)

E.

1. ( ) (SAWADA Kouga): The Pimsner-Voiculescu AF-embedding of the irrational rotation C^*-algebra and its subalgebra

2. ( ) (SAKO Hiroki): Twisted Bernoulli shift actions of $Z^2 \rtimes SL(2, Z)$

F.

1. *Communications in Mathematical Physics* editor.

2. *International Journal of Mathematics* chief editor.

3. *Japanese Journal of Mathematics* managing editor.

4. *Journal of Mathematical Physics* editor.

5. *Journal of Mathematical Sciences, the University of Tokyo* editor-in-chief.

6. *Reviews in Mathematical Physics* associate editor.

7. 1 (
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G.
(2002).

H.
Rolf Dyre Svegstrup,
(2006 10 2008 9) Operator algebraic study of conformal field theory.

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