Division of Mathematical and Physical Sciences	Research field	Basic Computational Mathematics	Lab. ID MP15
Laboratory web site	http://133.28.51.182/		

Research subjects

We study algebraic combinatorics and low dimensional topology. Through our research, representation theory and various types of polynomials are made use of. Key words: association scheme, spin model, coding theory, invariant theory, modular form, knot, quantum invariant, etc.

Master/Doctor course: Education policy, curriculum, typical activity in the laboratory

Students read fundamental books or papers on the field they choose. They proceed to find possible problems and try to solve them.

Daily life in the laboratory, etc.

We hope students make friends and discuss various matters.

Message or comments by the laboratory faculty staffs

We work hard together.

Recent Master theses in these 3 years (+ more if appropriate)

year.month	Thesis title (including English translation of Japanese thesis title)
2017.3	On the values of the colored Jones polynomial and the colored HOMFLY polynomial for the figure-eight knot
2016.9	The Terwilliger Algebra of Some Group Association Schemes
2016.3	Research on subgroups in the Rubik's cube group
2016.3	Research on cryptograpy based on braid groups and Thompson's groups
2015.9	Non-vanishing Terms of the Jones Polynomial
2015.9	The 5-Puzzle and 8-Puzzle with The Neighbors Swap Motion
2015.3	Mathematical structures of the puzzles with permutation groups
2014.9	Double quiver representation of quantum algebra and its representation type
2014.9	A conductance invariant on the electrical network
2014.3	Combinatorial structures of graphs associated to spin models
2013.9	On the Farthest Subconstituent of the q-Johnson Graph Jq(n,k)
2013.3	On weight enumerators and A-codes

Recent Doctoral theses in these 3 years (+ more if appropriate)

year.month	Thesis title (including English translation of Japanese thesis title)
2014.3	TD-pairs of type II with shape 1,2,⋯,2,1
2013.3	Study on Reed-Muller codes over Galois rings

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