

# Recent Advances in Modular Representation Theory of Hecke Algebras I, II, III

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In this minicourse, I explain how Fock spaces and the crystal base theory appear in the modular representation theory of Hecke algebras. In the first lecture, I explain the Geck-Rouquier theory for classifying simple modules of Hecke algebras. In the second lecture, I explain two classification results of simple modules of Hecke algebras and the appearance of two kinds of Fock spaces. In the third lecture, I explain my old result on the decomposition numbers and its applications. I keep this minicourse elementary and suitable for graduate students.