

Finite index subgroups of the modular group and right loops

Ling Long (Iowa State University, USA)

The modular group consists of 2×2 determinant 1 integral matrices. Finite index subgroups of the modular group are of fundamental importance in number theory, group theory and combinatorics. We will describe several different approaches to the study of these groups, including permutation representation, generalized Farey sequence, and right loop structures of some of these groups suggested by Dr. Jonathan D. H. Smith. In particular, we will discuss an example which motivates the discovery of some special two sided right loops, which are called Catalan loops by Smith.