ABSTRACT: THE GARSIDE GROUPS AND SOME OF THEIR PROPERTIES

Garside groups have been first introduced by P.Dehornoy and L.Paris in 1990. In many aspects, Garside groups extend braid groups and more generally finite-type Artin groups. These are torsion-free groups with a word and conjugacy problems solvable, and they are groups of fractions of monoids with a structure of lattice with respect to left and right divisibilities. It is natural to ask if there are additional properties Garside groups share in common with the intensively investigated braid groups and finite-type Artin groups. In this talk, I will introduce the Garside groups in general, and a particular class of Garside groups, that arise from certain solutions of the Quantum Yang-Baxter equation. I will describe the connection between these theories arising from different domains of research, present some of the questions raised for the Garside groups and give some partial answers to these questions.