

From Set-Theoretical Solutions of the Braid Equation to Left Shelves.

In this talk, I will introduce the set-theoretic braid equation and the algebraic structure of a left shelf. I will demonstrate how to associate a solution with every left shelf and show that every left non-degenerate solution can be derived from a left shelf solution. Additionally, I will explore the equivalence of solutions under bijective maps, termed Drinfel'd isomorphisms. The presentation will also include a definition of set-theoretic Yang-Baxter algebras and a discussion of their properties. Notably, some set-theoretic Yang-Baxter algebras possess an additional structure known as a pre-Lie skew brace. When the additional operation of this pre-Lie skew brace is abelian, a pre-Lie ring can be obtained. All concepts will be illustrated with examples.

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