

Braid groups and quantum groups

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Abstract : Quantum groups were created as algebraic structures allowing to construct in a systematic way (via representation theory) solutions of the Yang-Baxter equation, or braid equation : representations of quantum groups provide braided vector spaces. I shall recall the basic ingredients and necessary notions and give examples. Then, I shall reverse the process and show how very elementary examples of braided vector spaces lead to the construction, in a functorial way, of quantum groups. The same ideas allow to realize also their irreducible representations, and to give character formulas.