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Double Yangian and the universal R-matrix

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Abstract. We describe the double Yangian of the general linear Lie algebra $\mathfrak{gl}_N$ by following a general scheme of Drinfeld. We also describe the centre of the Yangian by using its Hopf algebra structure, and provide a proof of the analogue of the Poincaré–Birkhoff–Witt theorem for the Yangian based on its representation theory. This proof extends to the double Yangian.

Keywords and phrases: Hopf algebra, quantum double, Yangian

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