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ON THE INDECOMPOSABLE INVOLUTIVE SOLUTIONS OF THE YANG–BAXTER EQUATION OF FINITE PRIMITIVE LEVEL

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Abstract: In this paper, we study the class of indecomposable involutive solutions of the Yang–Baxter equation of finite primitive level, recently introduced by Cedó and Okniński in [**13**]. We give a group-theoretic characterization of these solutions by means of displacement groups, and we apply this result to compute and enumerate those having small size. For some classes of indecomposable involutive solutions recently studied in the literature, we compute the exact value of the primitive level. Some relationships with other families of solutions are also discussed. Finally, following [**13**, Question 3.2], we provide a complete description of those having primitive level 2 by left braces.

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Key words: imprimitive group, Yang–Baxter equation, brace, cycle set.