ON DERIVED-INDECOMPOSABLE SOLUTIONS
OF THE YANG–BAXTER EQUATION

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Abstract: If (X, r) is a finite non-degenerate set-theoretic solution of the Yang–Baxter equation, the additive group of the structure skew brace $G(X, r)$ is an FC-group, i.e. a group whose elements have finitely many conjugates. Moreover, its multiplicative group is virtually abelian, so it is also close to being an FC-group itself. If one additionally assumes that the derived solution of (X, r) is indecomposable, then for every element b of $G(X, r)$ there are finitely many elements of the form $b * c$ and $c * b$, with $c \in G(X, r)$. This naturally leads to the study of a brace-theoretic analogue of the class of FC-groups. For this class of skew braces, the fundamental results and their connections with the solutions of the YBE are described: we prove that they have good torsion and radical theories, and that they behave well with respect to certain nilpotency concepts and finite generation.