Abstract:Racks and quandles are special families of solutions to the set-theoretic Yang-Baxter equation. In 2007, R.Fenn, C. Rourke and B. Sanderson constructed rack spaces and homotopy invariants of framed links. In 2011, T. Nosaka built a link invariants using the second homotopy group of the quandle spaces. In 2016, S.Y. Yang built shadow homotopy invariants of classical links. In this article, we define a normalized homology for certain family of set-theoretic Yang-Baxter operators. We construct Yang-Baxter spaces for set-theoretic Yang-Baxter operators. Then we build homotopy invariants using the second homotopy group of the Yang-Baxter spaces of biquandles. In particular, we show that the second homotopy group of Yang-Baxter spaces of finite biracks are finitely generated.