Classification of virtual string links up to cobordism*

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Abstract

Cobordism of virtual string links on \( n \) strands is a combinatorial generalization of link cobordism. There exists a bijection between virtual string links on \( n \) strands up to cobordisms and elements of the direct product of \( n(n - 1) \) copies of the integers. This paper also shows that virtual string links up to unwelded equivalence are classified by those groups. Finally, the related theory of welded string link cobordism is defined herein and shown to be trivial for string links with one component.

Keywords: Virtual links, string links, cobordism, concordance, welded knots.

Math. Subj. Class.: 57K12, 57Q60

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Klasifikacija virtualnih strunskih sestavov do kobordizma natančno*

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Povzetek

Kobordizem virtualnih strunskih sestavov na n pramenih je kombinatorična posplošitev strunskega kobordizma. Obstaja povratno enolična preslikava med virtualnimi strunskimi sestavi na n pramenih do kobordizma natančno ter elementi direktnega produkta n(n − 1) kopij množice celih števil. V članku dokažemo tudi, da so virtualni strunski sestavi do nepetih ekvivalence natančno klasificirani s temi grupami. Nazadnje definiramo še ustrezno teorijo spetih strunskih kobordizmov in pokažemo, da je le-ta trivialna za enokomponentne strunske sestave.

Ključne besede: Virtualni sestavi, strunski sestavi, kobordizem, konkordanca, speti vozli.

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