Regular embeddings of cycles with multiple edges revisited

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Abstract: Regular embeddings of cycles with multiple edges have been reappearing in the literature for quite some time, both in and outside topological graph theory. The present paper aims to draw a complete picture of these maps by providing a detailed description, classification, and enumeration of regular embeddings of cycles with multiple edges on both orientable and non-orientable surfaces. Most of the results have been known in one form or another, but here they are presented from a unique viewpoint based on finite group theory. Our approach brings additional information about both the maps and their automorphism groups, and also gives extra insight into their relationships.

Keywords: Regular embedding, multiple edge, Holder's Theorem, Mobius map.

Še nekaj o regularnih vložitvah ciklov z večkratnimi povezavami

Povzetek: Regularne vložitve ciklov z večkratnimi povezavami se pojavljajo v literaturi že kar nekaj časa, tako v topološki teoriji grafov kot tudi izven nje. Ta članek izriše kompletno podobo teh zemljevidov na ta način, da povsem opiše, klasificira in enumerira regularne vložitve ciklov z večkratnimi povezavami tako na orientabilnih kot tudi na neorientabilnih ploskvah. Večina rezultatov je sicer znana v tej ali oni obliki, toda tu so predstavljeni iz poenotenega zornega kota, osnovanega na teoriji končnih grup. Naš pristop daje dodatno informacijo tako o zemljevidih kot o njihovih grupah avtomorfizmov, priskrbi pa tudi dodaten vpogled v njihove odnose.