Povzetek

Diplomsko delo obsega dva dela. Prvi del je računalniški program, ki implementira algoritem za vlaganje grafov na torus. Drugi del je ta diplomska naloga, ki obravnava teoretični vidik vlaganja grafov na torus preko projektivne ravnine. Prvi del je priložen diplomski nalogi na zgoščenki. V drugem delu bo obravnavana povezava celične širine grafov, vloženih v projektivno ravnino, in njihov orientabilni rod. Predstavljena bosta algoritem za ocenjevanje celične širine in algoritem za konstrukcijo vložitve na torus s pomočjo vložitve na projektivno ravnino. Prav tako bo podana groba struktura algoritma za vlaganje grafov na torus.

ključne besede: projektivna ravnina, torus, vložitev, celična širina,

Abstract

The work consists of two parts. The first part is a computer program that implements an algorithm for embedding graphs into the torus. The second part is this thesis which deals with the theoretical aspects of embedding graphs into the torus using embeddings into the projective plane. The first part is enclosed on a CD-ROM. In the second part, the connection between a face-width of a graph embedded into projective plane and its genus is discussed. The algorithm for estimating the face-width and the algorithm for constructing an embedding of a graph into the torus from embedding of the same graph into the projective plane are presented. At the end, there is a short description of the whole algorithm.

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Key words: projective plane, torus, embedding, face-width

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