From: zbMATH Open <reviewer-service@zbmath.org>

Sent: Monday, May 22, 2023 2:49 PM

To: sanhan.khasraw@su.edu.krd

Subject: zbMATH - Review receipt for DE076563889

Dear Sanhan Muhammad Salih Khasraw,

Thank you for your contribution to zbMATH Open. Your help is greatly appreciated.

Your review has been submitted as follows:

Document:

DE076563889

Qiao, Hongwei; Sabir, Eminjan; Meng, Jixiang

The spanning cyclability of Cayley graphs generated by

transposition trees

Classification:

05C60 68R10 68M10

Keywords:

Cayley graphs; transposition trees; spanning disjoint cycles; Hamiltonian cycles; two-disjoint path covers

Review Text:

```
\documentclass[a4paper,12pt,oneside]{article}

\usepackage{amsmath}
\usepackage{amssymb}
\usepackage{amsthm}
%\usepackage{parskip}
%\usepackage{setspace}
%\usepackage{ifthen}
%\usepackage{multicol}
%\usepackage{multirow}
%\usepackage{longtable}
%\usepackage[compact]{titlesec}
%\usepackage[titletoc]{appendix}
%\usepackage{dsfont}


\newtheorem{example}{Example}[section]
\newtheorem{definition}[example]{Definition}
\newtheorem{theorem}[example]{Theorem}
\newtheorem{corollary}[example]{Corollary}
\newtheorem{proposition}[example]{Proposition}
\newtheorem{lemma}[example]{Lemma}
\newtheorem{remark}[example]{Remark}
\newtheorem{exercise}[example]{Exercise}
```

```
\newtheorem{note}[example]{Note}

\usepackage{ textcomp }
\usepackage{ upgreek }
\usepackage{ dsfont }
\newcommand\RR{\mathbb{R}}

\newcommand\Ker{\mathrm{Ker\,}}
\newcommand\ind{\mathrm{ind\,}}
\newcommand\Fix{\mathrm{Fix\,}}
\newcommand\orb{\mathrm{orb\,}}
\newcommand\im{\mathrm{im\,}}
\newcommand\ad{\mathrm{ad}}
\newcommand\Ann{\mathrm{Ann}}

\newcommand\cA{\mathfrak{A}}
\newcommand\cF{\mathfrak{F}}
\newcommand\cH{\mathfrak{H}}
\newcommand\cJ{\mathfrak{J}}
\newcommand\cM{\mathfrak{M}}

\newcommand\al{\alpha}
\newcommand\bt{\beta}
\newcommand\Dl{\Delta}
\newcommand\lm{\lambda}
```

\newcommand\Lm{\Lambda}

\newcommand\Mu{\mathrm{M}}

\newcommand\la{\langle}

\newcommand\ra{\rangle}

\newcommand\Aut{\mathrm{Aut}}

\title{\textbf{Review for the article titled\\ “The spanning cyclability of Cayley graphs generated by

transposition trees”}} \author{by\\ Hongwei Qiao, Eminjan Sabir, Jixiang Meng} \date{}

\begin{document}

\maketitle

The simulation of one architecture by another is important in interconnection networks. This can be

done as a graph embedding problem. For the given graphs G and H, the embedding from G to

H is a mapping ϕ from the vertices of G to the vertices of H such that the image of any edge

in G is a path in H. The two fundamental network topologies that can be used to design simple

algorithms with low communication costs are cycles and paths. Embedding cycles into a network

topology is crucial for the network simulation. Most previous works focused on embedding one cycle

(path) in the network. This paper discusses the problem of embedding two or more cycles to span the

whole network, especially focusing on embedding spanning disjoint cycles in Cayley graphs generated by

transposition trees with each cycle contains a prescribed vertex. The main result of the paper is that the

Cayley graph Γ_n generated by transposition trees other than the star graph is paired many-

to-many two-disjoint path coverable for $n \ge 5$ is determined first, and then applied to show that

Γ_n is k-spanning cyclable if $k \le n - 2$ and $n \ge 3$. The result is best possible by

considering the degree of Γ_n.

\vspace{0.5cm}

END\\

Sanhan Khasraw

\end{document}

Remarks to Subject Editor:

Best regards,

Your zbMATH staff

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