

Electronic Journal of Graph Theory and Applications

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*Submission to Electronic Journal of Graph Theory and Applications*

Dear Editors,

please find attached the paper “Cycle Decompositions and Constructive Characterizations” written by Manuel Streicher and myself, which we hereby submit to *Electronic Journal of Graph Theory and Applications*.

Decomposing an Eulerian graph into a minimum respectively maximum number of edge disjoint cycles is an NP-complete problem. We prove that an Eulerian graph decomposes into a unique number of cycles if and only if it does not contain two edge disjoint cycles sharing three or more vertices. To this end, we discuss the interplay of three binary graph operators leading to novel constructive characterizations of two subclasses of Eulerian graphs. This enables us to present a polynomial-time algorithm which decides whether the number of cycles in a cycle decomposition of a given Eulerian graph is unique.

We appreciate your efforts and are looking forward to hearing from you.

Yours sincerely,

*Irene Heinrich*