

New results in $M_n(p, q)$ graphs

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(joint work with František Kardoš and Roman Soták)

Special category of two-faced maps consists of maps whose one face forms a ring. These graphs are labeled $M_n(p, q)$, where p, q are p -gonal and q -gonal faces. Exactly $M_n(p, q)$ is set of all 3-regular plane graphs having only p -gonal and q -gonal faces such that q -gonal faces form a ring R_n of n q -gons. ($p \geq 3, q \geq 4$). Deza and Sikirić presented a lot of results in [1] about ring maps $M_n(p, q)$ and other characteristics of two-faced maps.

About existence of ring maps $M_n(p, q)$ for $(n, 7, 5)$ was known only basic results published by Deza and Grishukhin in [2]. We proved existence of ring maps $M_n(p, q)$ for even $n \geq 28$, except $n = 34$ and for odd $n \geq 55$. Moreover we showed hamiltonicity some of $M_n(p, q)$ graphs.

REFERENCES

- [1] M. Deza, M.D. Sikirić, Geometry of chemical graphs: Polycycles and two-faced maps, Cambridge Univ. Press, 2008.
- [2] M. Deza, V.P. Grishukhin, Maps of p -gons with a ring of q -gons, Bull. Inst. Combin. Appl. 34 (2002), 99-110.