University of Mississippi

Combinatorics Seminar

Quadrilateral embeddings of cartesian product graphs

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3:00 PM–3:50 PM at Hume 321

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ABSTRACT

Quadrilateral embeddings of cartesian product graphs were first investigated by White and others as part of work on representing groups in surfaces using their Cayley graphs. Later the problem was studied in more generality. A number of important results were obtained by Pisanski, who in 1992 posed three questions. First, if G and H are connected 1-factorable r-regular graphs, does the cartesian product of G and H have an orientable quadrilateral embedding? Second, if G is r-regular, does the cartesian product of G with sufficiently many even cycles have an orientable quadrilateral embedding? Third, if G is an arbitrary connected graph, does the cartesian product of G with a sufficiently large hypercube have an orientable quadrilateral embedding? We answer all three questions.
This is joint work with Wenzhong Liu (Nanjing University of Aeronautics and Astronautics, China) and Dong Ye and Xiaoya Zha (Middle Tennessee State University).