The Pansophy of Multipartite Graphs

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The pansophy of a graph can be described as the expected value of the number of disjoint paths possible in a graph, given a randomly selected choice of starting and ending vertices. In a previous paper, Boats and Kikas demonstrated that bipartite graphs are pansophical, meaning that the pansophy of all graphs in that general class can be computed either by explicit formula or by a recursion that can be implemented in polynomial time. In this paper, the result is generalized to multipartite graphs.