Minimum edge ranking spanning tress of split graphs

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Given a graph G, the minimum edge ranking spanning tree problem (MERST) is to find a spanning tree of G whose edge ranking in minimum. However, this problem is known to be NP-hard for general graphs. In this paper, we show that the problem MERST has a polynomial time algorithm for split graphs, which have useful applications in particle. The result is also significant in the sense that this is a first non-trivial graph class for which the problem MERST is found be polynomially solvable. We also show that the problem MERST for threshold graphs can be solved in linear time, where threshold graphs are known to be split.