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OPERATIONS IN PLITHOGENIC PRODUCT FUZZY GRAPHS

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Abstract: Operations of Plithogenic complement, perfect Plithogenic complement, union and intersection in Plithogenic product fuzzy graphs (PPFGs) have been newly defined and discussed based on the definition of PPFGs. P -vertices, their adjacency and the number of attribute values are identical in a Plithogenic product fuzzy graph (PPFG) and its Plithogenic complement, while the corresponding attribute values of their elements generally differ. In case of perfect Plithogenic complement, every pair of nonadjacent P -vertices are also adjacent. Union or intersection of two PPFGs exists provided the number of attribute values are equal in both. Moreover, for the intersection of two PPFGs, it is necessary that P -vertices and their adjacency are identical in both the graphs, though structures of the graphs could be different. As in PPFGs, multiple attribute values are computed and allotted to the elements of Plithogenic complement, perfect Plithogenic complement, union and intersection of PPFGs.

Keywords and Phrases: Plithogenic fuzzy graphs, Plithogenic product fuzzy graphs, Plithogenic complement, perfect Plithogenic complement, union, intersection.

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