

## CORONA PRODUCT OF PRODUCT FUZZY GRAPHS

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**Abstract:** In this article, a new operation on product fuzzy graphs (PFGs) is provide; namely corona product. We give sufficient conditions for the corona product of two PFGs to be complete. We also study the unbiased notion of the class of PFGs and necessary and sufficient conditions for the corona product to be unbiased are given.

**Keywords and Phrases:** PFG, complete PFG, unbiased PFG, corona product.

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### 1. Background

Graph theory has many applications in mathematics and economics. Since most problems of graphs are undetermind, it is necessary to handel these facets via the method of fuzzy logic. Fuzzy relations were introduced by Zadeh [22] in 1965. Rosenfeld [19] in 1975, introduced fuzzy graphs (simply, FG) and some ideas that are generalizations of those of graph's. Now adays, this theory is having more and more applications in which the informatiion level immanent in the system differ with various levels of accuracy. Fuzzy models are convenient as they reduce differences between long-established numerical models of expert systems and symbolic models. Peng and Mordeson [14] defined the conceptualization of FG's complement and conscious FG's operations. In [21], improved complement's definition in order to guarantee the original FG is isomorphic to complement of the complement, which concur with the case of crisp graphs. In addition, self-complementary