On cartesian product of vertex measurable graphs

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Abstract

In [2] for any graph G, a σ algebra $\Im$ of vertex induced sub graphs of G, is defined and many of its properties are studied. Let G_1 and G_2 be two simple graphs. Let $(G_1, \Im_1)$ and $(G_2, \Im_2)$ be two vertex measure spaces. In this paper we introduce a σ algebra $\Im_1 \times \Im_2$, which consists of all vertex induced sub graphs of $G_1 \times G_2$, and it contains every vertex measurable rectangle graph of the form $H_1 \times H_2$, $H_1 \in \Im_1$ and $H_2 \in \Im_2$. Also, we introduce an elementary vertex measurable rectangle graph and a vertex graph monotone class and study some of their properties. Finally, we prove $\Im_1 \times \Im_2$ is the smallest vertex graph monotone class which contains all elementary vertex measurable rectangle graphs.

Keywords: *vertex measurable rectangle graph, elementary vertex measurable rectangle graph, vertex graph monotone class.*