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Mathematical Model to Determine the Repeat Size of Fabric Weave Design

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Abstract—With the advent of human civilization, textile products (yarn and fabric) had made their significance. They feel a need to cover themselves to appear civilized as human society has progressed. Later, other reasons like social status and religious requirements also add up in it. Fabric is used to satisfy the textile and aesthetic needs for centuries. To play with the design of fabric, making it more attractive and appealing, a repeat of the fabric design is the basic tool. Different techniques exist to determine the repeat size of fabric weave design when the fabric is already weaved. But if we look from the perspective of the designer, who wishes to change the design and make different alterations to the basic design, he has no option other than to draw the design on graph paper and determine its repeat size. We purpose a Mathematical Model that omits the need of drawing the whole design. We generalize it for any basic weave design and combination of pivot points. This model has helped in reducing the consumption of time and eliminating the chances of human error.

Keywords—Repeat Size, Fabric Weave Design, Mathematical Model