

Meeting: 1003, Atlanta, Georgia, SS 21A, AMS Special Session on Mathematics and Mathematics Education in Fiber Arts

1003-00-840 **Mary D Shepherd*** (msheprd@mail.nwmissouri.edu), Dept. of Mathematics & Statistics, Northwest Missouri State University, 800 University Drive, Maryville, MO 64468. *Symmetries in Cross-Stitch.*

Symmetry has been used in the artist endeavors of nearly every culture. Symmetries involving motifs that repeat are used in borders and as backgrounds. There are precisely seven frieze patterns (for borders) and 17 wallpaper patterns. Counted cross-stitch is done in a lattice type layout. Each cross-stitch covers one square, or in some cases half a square (on the diagonal) on some type of even-weave fabric. All the frieze patterns but not all of the 17 wallpaper patterns are possible in counted cross-stitch. This talk will discuss the wallpaper patterns that are possible and the frieze patterns and give examples of several of these symmetries from the author's collection of counted cross-stitch patterns. (Received September 30, 2004)