

# Physics Seminar

Monday 9/28/2009, 4:30 pm  
Science & Engineering Building Auditorium

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## Classifying Pretty Thread Balls: Why Conway's Discrete Spherical Symmetry Groups Aren't Enough



Artists and mathematicians making patterns on surfaces eventually realize that often while the content of a given pattern can vary, the underlying structure can remain the same. Indeed, through the use of abstract algebra, one can show that there are only 17 underlying wallpaper patterns. We might then ask how many essential patterns are there on a sphere. In *The Symmetry of Things*, by Conway, Burgiel, and Goodman-Strauss this number is shown to be 14. However, we demonstrate that this set of classes is not sufficient to distinguish between the pattern types embroidered on temari balls.

*Please join us for light refreshments at 4:15pm outside SEB 203.*