1046-05-376 **Katherine P. Benedetto** and **Nicholas A. Loehr*** (nloehr@vt.edu), 460 McBryde Hall, Dept. of Mathematics, Blacksburg, VA 24060. *Tiling Bijections via Finite Automata.*

This talk explores some combinatorial ramifications of a method (studied by Merlini et al., Zeilberger, and others) for enumerating tilings using regular languages. The basic idea is to encode a tiling problem by a finite state machine that generates strings corresponding to valid tilings. We use this technique to derive bijective proofs that certain tiling problems have the same number of solutions. Applications to three-dimensional tilings and other extensions will also be discussed. (Received August 28, 2008)