1035-55-345 **Marcy Barge*** (barge@math.montana.edu), Department of Mathematics, Montana State University, Bozeman, MT 59717, and **Beverly Diamond** and **Richard Swanson**. *The branch locus in one-dimensional Pisot substitution tiling spaces.*

One-dimensional Pisot substitution tiling spaces factor onto d-dimensional solenoids (d the Pisot degree), with the factor map collapsing out all the branching that occurs in the tiling space in the form of asymptotic arc-components. The branch locus is a finite set of points situated in the solenoid so as to reflect the topological interrelationships of these asymptotic elements. The solenoid, with its branch locus, becomes a topological invariant of the tiling space, as does the ordered cohomology of the pair (solenoid, branch locus). We'll give some examples, using the branch locus to distinguish topological types of tiling spaces. (Received September 03, 2007)