1033-58-151   **Martin J Schmoll*** (`schmoll@clemson.edu`), O-212 Martin Hall, Clemson University, Clemson, SC 29634. *Modular fibers.*

We report on research about "modular fibers", i.e. spaces of covers of a given abelian differential. Our main motivation is to construct families of translation surfaces with prescribed Veech group and to classify $SL(2, \mathbb{Z})$ orbits of arithmetic Veech surfaces contained in particular modular fibers using the flat structure of the modular fiber. Applications are relatively easy calculations of Siegel-Veech constants for the translation surfaces parametrized by the modular fiber. (Received September 09, 2007)