



Chi Cheuk Tsang, UC Berkeley

Consider the sutured handlebody given by the outside of top left. This postcard illustrates some disc decompositions of it. Each decomposition determines a depth 1 foliation, or equivalently an endperiodic surface map. An effort was made to draw each endperiodic map to the right of its respective disc decomposition: Each figure is a union $W^+ \cup K \cup W^-$, where $W^+ \cup K$ contains the blue train track and $K \cup W^-$ contains the red train track. A map $K \cup W^- \rightarrow W^+ \cup K$ is determined by the labels on the boundary of these subsurfaces. This extends to an endperiodic map defined on $\bigcup_{i=0}^{\infty} W^+ \cup K \cup \bigcup_{i=-\infty}^0 W^-$.

Now, an endperiodic map determines a pair of Handel-Miller laminations, see “Endperiodic Automorphisms of Surfaces and Foliations”, Cantwell-Conlon-Fenley. Train tracks carrying these laminations are drawn on the respective surfaces. By endperiodicity, these induce train tracks on the boundary of the original sutured handlebody. For each of these, the recurrent subtrain track is recorded back on the left as a pair of multi-curves. It is interesting (to me) to study how these curves vary as one moves between different depth one foliations.