CODIMENSION ONE FOLIATIONS - PROBLEM SET 3
ICERM - JULY 19, 2019

(1) Prove that any train track fully carries a lamination.

(2) Prove that any branched surface with no triple points fully carries a lamination.

(3) Define an equivalence relation that relates the canonical models (as given in the lecture) of a branched surface about a triple point.

(4) Consider the branched surface $B_i = \langle S_1, ..., S_i \rangle$. Show that $\partial_v N(B_{i+1})$ is obtained from $\partial_v N(B_i)$ and ∂S_{i+1} by sutured manifold decomposition.

(5) Prove that 8_{21} is fibered, with fiber as given, by finding an appropriate family of product disks. Give two easy topological ways to read off the genus of this knot.

(6) Suppose the knot k can be represented as a closed positive braid. Prove that k is fibered using product sutured manifold hierarchies. Give two easy topological ways to read off the genus of such a knot. As a warmup, consider the $T_{2,q}$ torus knots.

Date: July 18, 2019.