

Veering triangulations and fibered faces of 3—manifolds

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From a pseudo-Anosov homeomorphism of a surface, Agol's veering triangulation gives a canonical ideal triangulation of the associated mapping torus punctured along singular fibers. By recent work of Gueritaud, this triangulation can be directly obtained from the stable and unstable laminations of the monodromy. We study the way in which these triangulations interact with the arc complexes of fibers and their subsurfaces. In particular, we find that the veering triangulation records the hierarchy of subsurface projections associated to each fiber in a fibered face of the Thurston norm ball. These projections are in fact visible as embedded subcomplexes of the veering triangulation itself. Through this structure, we obtained explicit control over the size and nature of subsurface projections occurring over a fixed fibered face.

This is joint work with Yair Minsky.