

Visualizing PML

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We present the methods and results of an ongoing collaboration with François Guéritaud to visualize the space of projective measured laminations (PML) on a hyperbolic surface of finite type. Specifically, we study PML in Thurston's "d-log-length" embedding, which realizes this lamination space as the boundary of a convex open neighborhood of the origin in the cotangent space of Teichmüller space. By considering non-orientable and punctured surfaces, we find a wealth of examples in which the dimension of PML is small enough to enable meaningful exploration through computer graphics. We also demonstrate related 3D graphics programs developed by undergraduate researchers Galen Ballew and Alexander Gilbert in the Mathematical Computing Laboratory at the University of Illinois at Chicago.