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David Dumas* (ddumas@math.uic.edu), University of Illinois at Chicago, 851 S. Morgan St., Chicago, IL 60607. *Epstein surfaces, trees, and bubbles*. Preliminary report.

We will discuss a construction of Epstein that starts with a conformal metric on a domain in \mathbb{C} and produces a locally convex surface in 3-dimensional hyperbolic space. By applying this construction to singular Euclidean metrics and analyzing the geometry of the Epstein surface, we obtain new results about the holonomy representations of $\mathbb{C}\mathbb{P}^1$ structures on Riemann surfaces.

Specifically, near a finite set of points, the surface has "bubbles" of large area, while everywhere else it approximates a geodesic lamination. This lamination can be used to determine the limit \mathbb{R} -tree of a divergent sequence of holonomy representations. (Received January 28, 2009)