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Geodesic zippers

E. Sharon and D. Mumford [Internat. J. Comp. Vision **70**(2006)] classify 2D shapes using “fingerprints” or conformal weldings. If C is a planar Jordan curve and if f and g are conformal maps from the inside and outside of the unit circle to the inside and outside of C , respectively, then $h = f^{-1} \circ g$ is a diffeomorphism of the unit circle and is called a “conformal welding”.

We give a (numerical) algorithm for the computation of h from C and for the computation of C from h . The algorithm is elementary, easy to program, as well as fast and accurate in practice.