Computing the image of Thurston’s skinning map

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The Skinning Map

Goal: Compute and see image of $\sigma_M$
The Examples
The Method

Intersections in the character variety
The Implementation

Triangulate the fiber product
The Flayer
Demonstration of fiber product reconstruction
Gallery of skinning map images
Oct1 – Rectangular boundary \[ cf. \text{Chesebro-Deblois}\]
Oct1 – Rectangular boundary  [cf. Chesebro-Deblois]

$[-2, 2] \times [0, 4]$
Oct1 – Rectangular boundary  
[cf. Chesebro-Deblois]
Oct 1 – Rectangular boundary  [cf. Chesebro-Deblois]
Oct2 – Tetrahedral boundary

\([-2, 2] \times [0, 4]\)

[cf. Gaster]
Oct2 – Tetrahedral boundary [cf. Gaster]

\([-2, 2] \times [0, 4]\)
Oct2 – Tetrahedral boundary [cf. Gaster]
Oct2 – Tetrahedral boundary [cf. Gaster]
Oct3 – Square boundary

$[-2, 2] \times [0, 4]$
Oct3 – Square boundary

$[-2, 2] \times [0, 4]$
Oct3 – Square boundary
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The Octahedral Manifolds
Tools

- Python!
- Flayer
  - Fiber product 2-complex construction
  - Rasterizer
  - Fricke calculus and extension variety code generation
  - Under development, source will be released
- cp1
  - New library for $\mathbb{CP}^1$ structures
  - Python ($+\ C\ +\ Cython\ +\ GSL$)
  - [http://github.com/daviddumas/cp1](http://github.com/daviddumas/cp1)