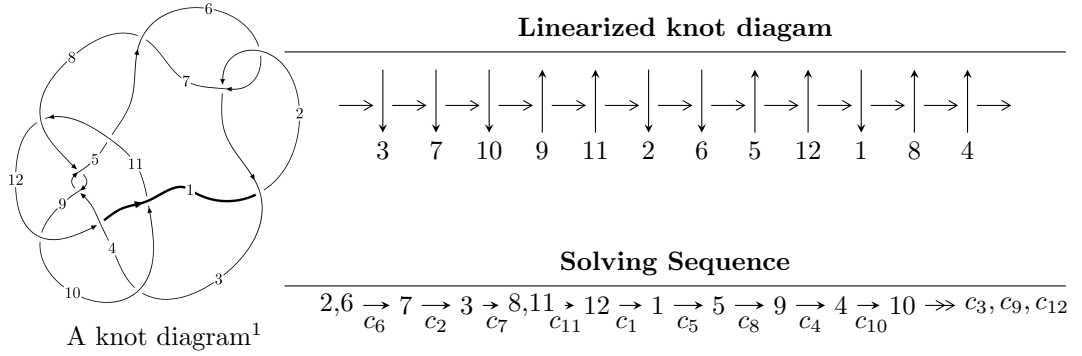


12a₀₆₃₁ (K12a₀₆₃₁)



Ideals for irreducible components² of X_{par}

$$I_1^u = \langle -1.55586 \times 10^{199} u^{136} - 3.48558 \times 10^{199} u^{135} + \dots + 7.08230 \times 10^{199} b - 2.19097 \times 10^{201}, \\ - 3.62369 \times 10^{200} u^{136} + 5.95737 \times 10^{199} u^{135} + \dots + 9.20699 \times 10^{200} a - 4.72404 \times 10^{202}, \\ u^{137} - 20u^{135} + \dots + 8u + 13 \rangle$$

$$I_2^u = \langle -2u^{24} - 2u^{23} + \dots + b + 3u, 411u^{24} + 715u^{23} + \dots + 29a - 1052, u^{25} + u^{24} + \dots - 9u^2 + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 162 representations.

¹The image of knot diagram is generated by the software “**Draw programme**” developed by Andrew Bartholomew(<http://www.layer8.co.uk/maths/draw/index.htm#Running-draw>), where we modified some parts for our purpose(<https://github.com/CATsTAILs/LinksPainter>).

²All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

$$\mathbf{I. } I_1^u = \langle -1.56 \times 10^{199} u^{136} - 3.49 \times 10^{199} u^{135} + \dots + 7.08 \times 10^{199} b - 2.19 \times 10^{201}, -3.62 \times 10^{200} u^{136} + 5.96 \times 10^{199} u^{135} + \dots + 9.21 \times 10^{200} a - 4.72 \times 10^{202}, u^{137} - 20u^{135} + \dots + 8u + 13 \rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.393580u^{136} - 0.0647048u^{135} + \dots - 72.5869u + 51.3092 \\ 0.219683u^{136} + 0.492153u^{135} + \dots - 16.7611u + 30.9359 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.624416u^{136} - 1.58638u^{135} + \dots - 71.2059u + 68.4912 \\ 1.42220u^{136} + 0.528391u^{135} + \dots - 23.5112u + 50.2466 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 5.56418u^{136} - 4.23778u^{135} + \dots - 98.6052u + 66.8624 \\ 3.90303u^{136} - 4.04280u^{135} + \dots - 37.9656u + 104.599 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.540857u^{136} + 1.45019u^{135} + \dots + 13.5778u - 12.5870 \\ -2.27532u^{136} - 0.201414u^{135} + \dots + 54.9112u - 22.6952 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 4.41963u^{136} - 3.59377u^{135} + \dots - 71.2216u + 92.7479 \\ 4.18373u^{136} - 3.47970u^{135} + \dots - 56.9236u + 81.5572 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.208814u^{136} - 0.757186u^{135} + \dots - 69.1192u + 57.1447 \\ 0.453845u^{136} + 0.907411u^{135} + \dots - 0.585492u + 26.8148 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $-2.68992u^{136} + 6.00496u^{135} + \dots - 46.6040u - 120.851$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{137} + 40u^{136} + \dots + 4042u + 169$
c_2, c_6	$u^{137} - 20u^{135} + \dots + 8u + 13$
c_3	$u^{137} + 2u^{136} + \dots - 31644u + 3869$
c_4, c_8	$u^{137} + 6u^{136} + \dots + 60u + 2$
c_5	$u^{137} + u^{136} + \dots + 11u + 1$
c_9	$u^{137} - 12u^{136} + \dots + 48u + 1$
c_{10}	$u^{137} + 9u^{136} + \dots + 32u - 128$
c_{11}	$u^{137} + u^{136} + \dots + 760u + 7$
c_{12}	$u^{137} + 9u^{136} + \dots + 55158u + 5036$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{137} + 120y^{136} + \dots + 779962y - 28561$
c_2, c_6	$y^{137} - 40y^{136} + \dots + 4042y - 169$
c_3	$y^{137} + 36y^{136} + \dots - 513688022y - 14969161$
c_4, c_8	$y^{137} + 100y^{136} + \dots - 848y - 4$
c_5	$y^{137} - 3y^{136} + \dots - 191y - 1$
c_9	$y^{137} + 12y^{136} + \dots - 696y - 1$
c_{10}	$y^{137} + 21y^{136} + \dots + 152576y - 16384$
c_{11}	$y^{137} - 13y^{136} + \dots + 530448y - 49$
c_{12}	$y^{137} + 35y^{136} + \dots - 1685724212y - 25361296$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.950342 + 0.290973I$		
$a = 0.93783 - 1.43485I$	$-6.41076 + 4.67038I$	0
$b = -0.91390 - 1.41574I$		
$u = -0.950342 - 0.290973I$		
$a = 0.93783 + 1.43485I$	$-6.41076 - 4.67038I$	0
$b = -0.91390 + 1.41574I$		
$u = -1.001520 + 0.114802I$		
$a = 1.62158 - 1.27980I$	$-5.96822 + 4.40940I$	0
$b = 0.085542 - 0.708863I$		
$u = -1.001520 - 0.114802I$		
$a = 1.62158 + 1.27980I$	$-5.96822 - 4.40940I$	0
$b = 0.085542 + 0.708863I$		
$u = -0.909207 + 0.443165I$		
$a = 0.530936 - 0.405342I$	$-1.89367 + 1.23105I$	0
$b = 0.330665 - 0.334576I$		
$u = -0.909207 - 0.443165I$		
$a = 0.530936 + 0.405342I$	$-1.89367 - 1.23105I$	0
$b = 0.330665 + 0.334576I$		
$u = 0.956317 + 0.220620I$		
$a = -0.931643 - 1.054290I$	$-2.78104 - 3.83969I$	0
$b = 0.591141 - 0.803215I$		
$u = 0.956317 - 0.220620I$		
$a = -0.931643 + 1.054290I$	$-2.78104 + 3.83969I$	0
$b = 0.591141 + 0.803215I$		
$u = 1.007280 + 0.176412I$		
$a = 0.008920 + 1.172450I$	$-6.99924 - 5.78107I$	0
$b = -0.75856 + 1.28902I$		
$u = 1.007280 - 0.176412I$		
$a = 0.008920 - 1.172450I$	$-6.99924 + 5.78107I$	0
$b = -0.75856 - 1.28902I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.935256 + 0.422309I$ $a = 0.582088 - 0.381280I$ $b = 0.117649 - 0.808197I$	$-1.81476 + 1.51215I$	0
$u = -0.935256 - 0.422309I$ $a = 0.582088 + 0.381280I$ $b = 0.117649 + 0.808197I$	$-1.81476 - 1.51215I$	0
$u = -0.791307 + 0.549429I$ $a = 0.446544 - 0.685802I$ $b = 0.266359 - 0.001806I$	$-1.92744 + 1.24860I$	0
$u = -0.791307 - 0.549429I$ $a = 0.446544 + 0.685802I$ $b = 0.266359 + 0.001806I$	$-1.92744 - 1.24860I$	0
$u = 0.894078 + 0.265913I$ $a = -1.65379 - 0.07115I$ $b = -0.283343 - 1.286370I$	$-6.60071 - 0.53295I$	0
$u = 0.894078 - 0.265913I$ $a = -1.65379 + 0.07115I$ $b = -0.283343 + 1.286370I$	$-6.60071 + 0.53295I$	0
$u = 0.794489 + 0.731554I$ $a = 1.62095 + 0.72026I$ $b = -1.375230 - 0.223785I$	$2.71952 - 0.44182I$	0
$u = 0.794489 - 0.731554I$ $a = 1.62095 - 0.72026I$ $b = -1.375230 + 0.223785I$	$2.71952 + 0.44182I$	0
$u = 0.782958 + 0.749202I$ $a = -1.65544 - 0.30724I$ $b = -0.0336307 + 0.0554863I$	$-0.37534 + 3.64365I$	0
$u = 0.782958 - 0.749202I$ $a = -1.65544 + 0.30724I$ $b = -0.0336307 - 0.0554863I$	$-0.37534 - 3.64365I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.768257 + 0.785459I$ $a = -0.99074 + 1.59719I$ $b = 1.41503 - 1.30206I$	$-0.73290 - 4.89341I$	0
$u = -0.768257 - 0.785459I$ $a = -0.99074 - 1.59719I$ $b = 1.41503 + 1.30206I$	$-0.73290 + 4.89341I$	0
$u = -1.098210 + 0.039739I$ $a = 0.000744 + 0.224690I$ $b = 0.429666 + 0.334160I$	$-2.38231 - 0.07495I$	0
$u = -1.098210 - 0.039739I$ $a = 0.000744 - 0.224690I$ $b = 0.429666 - 0.334160I$	$-2.38231 + 0.07495I$	0
$u = -1.014590 + 0.425663I$ $a = -1.130760 - 0.526430I$ $b = -0.263711 + 0.872601I$	$-5.56798 + 0.31097I$	0
$u = -1.014590 - 0.425663I$ $a = -1.130760 + 0.526430I$ $b = -0.263711 - 0.872601I$	$-5.56798 - 0.31097I$	0
$u = 1.084680 + 0.245425I$ $a = -0.373890 - 1.292780I$ $b = 0.599391 - 0.872750I$	$-2.80549 - 5.27118I$	0
$u = 1.084680 - 0.245425I$ $a = -0.373890 + 1.292780I$ $b = 0.599391 + 0.872750I$	$-2.80549 + 5.27118I$	0
$u = -0.885377 + 0.676654I$ $a = -1.39524 - 0.56773I$ $b = 0.207385 + 0.294997I$	$-2.12146 + 3.75084I$	0
$u = -0.885377 - 0.676654I$ $a = -1.39524 + 0.56773I$ $b = 0.207385 - 0.294997I$	$-2.12146 - 3.75084I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.986584 + 0.522645I$ $a = -0.537739 - 1.149890I$ $b = 0.128058 - 1.077410I$	$-3.61378 - 1.44795I$	0
$u = 0.986584 - 0.522645I$ $a = -0.537739 + 1.149890I$ $b = 0.128058 + 1.077410I$	$-3.61378 + 1.44795I$	0
$u = 0.048135 + 0.880536I$ $a = -0.493626 - 0.402684I$ $b = 0.622431 + 0.305290I$	$2.56389 + 3.71181I$	0
$u = 0.048135 - 0.880536I$ $a = -0.493626 + 0.402684I$ $b = 0.622431 - 0.305290I$	$2.56389 - 3.71181I$	0
$u = 0.709176 + 0.889402I$ $a = 1.060470 + 0.245934I$ $b = -0.938472 - 0.032551I$	$4.44847 + 0.62496I$	0
$u = 0.709176 - 0.889402I$ $a = 1.060470 - 0.245934I$ $b = -0.938472 + 0.032551I$	$4.44847 - 0.62496I$	0
$u = -0.804416 + 0.811717I$ $a = 1.58736 - 0.88904I$ $b = -0.984549 + 0.325999I$	$3.76794 - 2.21552I$	0
$u = -0.804416 - 0.811717I$ $a = 1.58736 + 0.88904I$ $b = -0.984549 - 0.325999I$	$3.76794 + 2.21552I$	0
$u = -0.738379 + 0.880183I$ $a = 0.924035 - 0.625755I$ $b = -0.917993 + 1.004520I$	$4.78596 - 4.84103I$	0
$u = -0.738379 - 0.880183I$ $a = 0.924035 + 0.625755I$ $b = -0.917993 - 1.004520I$	$4.78596 + 4.84103I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.101370 + 0.334392I$ $a = -0.630612 + 1.044650I$ $b = 0.77479 + 1.20521I$	$-6.0459 + 13.5824I$	0
$u = -1.101370 - 0.334392I$ $a = -0.630612 - 1.044650I$ $b = 0.77479 - 1.20521I$	$-6.0459 - 13.5824I$	0
$u = -0.878380 + 0.744243I$ $a = 0.802399 - 0.213731I$ $b = 0.056170 - 1.387260I$	$-1.91195 + 2.82674I$	0
$u = -0.878380 - 0.744243I$ $a = 0.802399 + 0.213731I$ $b = 0.056170 + 1.387260I$	$-1.91195 - 2.82674I$	0
$u = -0.078237 + 0.841438I$ $a = 0.582772 - 0.819572I$ $b = -0.762907 + 0.915721I$	$-2.58279 - 9.55814I$	0
$u = -0.078237 - 0.841438I$ $a = 0.582772 + 0.819572I$ $b = -0.762907 - 0.915721I$	$-2.58279 + 9.55814I$	0
$u = 1.139990 + 0.192620I$ $a = 0.790000 + 0.279063I$ $b = 0.397059 + 0.882263I$	$-6.90350 + 6.13066I$	0
$u = 1.139990 - 0.192620I$ $a = 0.790000 - 0.279063I$ $b = 0.397059 - 0.882263I$	$-6.90350 - 6.13066I$	0
$u = 1.110150 + 0.335786I$ $a = 0.356989 + 0.624780I$ $b = -0.655276 + 0.780506I$	$-1.03048 - 7.81260I$	0
$u = 1.110150 - 0.335786I$ $a = 0.356989 - 0.624780I$ $b = -0.655276 - 0.780506I$	$-1.03048 + 7.81260I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.867468 + 0.781275I$ $a = -2.35155 - 0.02698I$ $b = 1.10985 - 1.62312I$	$5.18453 - 1.05366I$	0
$u = 0.867468 - 0.781275I$ $a = -2.35155 + 0.02698I$ $b = 1.10985 + 1.62312I$	$5.18453 + 1.05366I$	0
$u = 0.813156 + 0.841912I$ $a = -1.35305 - 1.68742I$ $b = 1.49093 + 1.21883I$	$0.78055 + 2.73858I$	0
$u = 0.813156 - 0.841912I$ $a = -1.35305 + 1.68742I$ $b = 1.49093 - 1.21883I$	$0.78055 - 2.73858I$	0
$u = 0.861177 + 0.796914I$ $a = -1.47855 - 0.64041I$ $b = 1.093070 + 0.842656I$	$2.85072 + 2.60130I$	0
$u = 0.861177 - 0.796914I$ $a = -1.47855 + 0.64041I$ $b = 1.093070 - 0.842656I$	$2.85072 - 2.60130I$	0
$u = -0.853253 + 0.814086I$ $a = 2.46708 - 0.94612I$ $b = -1.97715 - 0.64182I$	$3.79616 - 3.17397I$	0
$u = -0.853253 - 0.814086I$ $a = 2.46708 + 0.94612I$ $b = -1.97715 + 0.64182I$	$3.79616 + 3.17397I$	0
$u = 0.862701 + 0.805862I$ $a = 1.68281 - 0.06727I$ $b = -0.872426 + 1.061440I$	$4.79052 - 1.96597I$	0
$u = 0.862701 - 0.805862I$ $a = 1.68281 + 0.06727I$ $b = -0.872426 - 1.061440I$	$4.79052 + 1.96597I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.754607 + 0.910265I$ $a = -1.068180 + 0.875148I$ $b = 1.19362 - 0.78063I$	$7.31766 - 7.24489I$	0
$u = -0.754607 - 0.910265I$ $a = -1.068180 - 0.875148I$ $b = 1.19362 + 0.78063I$	$7.31766 + 7.24489I$	0
$u = 0.759250 + 0.912031I$ $a = 0.97944 + 1.15570I$ $b = -1.15228 - 1.24083I$	$2.31414 + 12.93820I$	0
$u = 0.759250 - 0.912031I$ $a = 0.97944 - 1.15570I$ $b = -1.15228 + 1.24083I$	$2.31414 - 12.93820I$	0
$u = 0.900770 + 0.772587I$ $a = 0.33484 + 1.57531I$ $b = -1.27968 - 1.54211I$	$5.08111 - 4.80137I$	0
$u = 0.900770 - 0.772587I$ $a = 0.33484 - 1.57531I$ $b = -1.27968 + 1.54211I$	$5.08111 + 4.80137I$	0
$u = -0.872344 + 0.804631I$ $a = 0.916320 - 0.370213I$ $b = -0.912144 + 0.667956I$	$7.07442 + 0.97442I$	0
$u = -0.872344 - 0.804631I$ $a = 0.916320 + 0.370213I$ $b = -0.912144 - 0.667956I$	$7.07442 - 0.97442I$	0
$u = 0.950395 + 0.716907I$ $a = -1.67000 - 1.07725I$ $b = 1.276130 - 0.483192I$	$2.23344 - 5.09816I$	0
$u = 0.950395 - 0.716907I$ $a = -1.67000 + 1.07725I$ $b = 1.276130 + 0.483192I$	$2.23344 + 5.09816I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.762758 + 0.244144I$		
$a = 0.028861 - 0.463382I$	$-2.43341 - 6.29674I$	0
$b = 1.65484 - 0.08751I$		
$u = 0.762758 - 0.244144I$		
$a = 0.028861 + 0.463382I$	$-2.43341 + 6.29674I$	0
$b = 1.65484 + 0.08751I$		
$u = 0.771416 + 0.919326I$		
$a = -0.680630 - 0.581151I$	$7.39606 + 0.27229I$	0
$b = 0.860387 + 0.693182I$		
$u = 0.771416 - 0.919326I$		
$a = -0.680630 + 0.581151I$	$7.39606 - 0.27229I$	0
$b = 0.860387 - 0.693182I$		
$u = 0.911621 + 0.781692I$		
$a = 2.37631 + 0.99446I$	$2.69352 - 8.53175I$	0
$b = -1.005870 + 0.894709I$		
$u = 0.911621 - 0.781692I$		
$a = 2.37631 - 0.99446I$	$2.69352 + 8.53175I$	0
$b = -1.005870 - 0.894709I$		
$u = 0.955894 + 0.727386I$		
$a = 1.77188 - 0.02873I$	$-0.90606 - 9.26953I$	0
$b = -0.109721 + 0.211859I$		
$u = 0.955894 - 0.727386I$		
$a = 1.77188 + 0.02873I$	$-0.90606 + 9.26953I$	0
$b = -0.109721 - 0.211859I$		
$u = -0.906288 + 0.794900I$		
$a = -1.60654 + 0.79600I$	$6.96947 + 5.02069I$	0
$b = 0.788727 + 0.745031I$		
$u = -0.906288 - 0.794900I$		
$a = -1.60654 - 0.79600I$	$6.96947 - 5.02069I$	0
$b = 0.788727 - 0.745031I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.791429 + 0.010552I$ $a = -2.17998 - 1.26884I$ $b = 0.157896 - 1.009630I$	$-6.00762 - 0.14286I$	$-9.55958 + 0.I$
$u = 0.791429 - 0.010552I$ $a = -2.17998 + 1.26884I$ $b = 0.157896 + 1.009630I$	$-6.00762 + 0.14286I$	$-9.55958 + 0.I$
$u = 0.914397 + 0.794451I$ $a = -0.392280 - 1.138750I$ $b = 0.996651 + 0.925423I$	$4.63337 - 4.03117I$	0
$u = 0.914397 - 0.794451I$ $a = -0.392280 + 1.138750I$ $b = 0.996651 - 0.925423I$	$4.63337 + 4.03117I$	0
$u = -0.925023 + 0.790867I$ $a = -1.63490 + 1.64025I$ $b = 2.07106 - 0.52305I$	$3.57237 + 9.18485I$	0
$u = -0.925023 - 0.790867I$ $a = -1.63490 - 1.64025I$ $b = 2.07106 + 0.52305I$	$3.57237 - 9.18485I$	0
$u = -0.969972 + 0.744725I$ $a = 2.42946 - 0.47513I$ $b = -1.32866 - 1.48883I$	$-1.34490 + 10.67560I$	0
$u = -0.969972 - 0.744725I$ $a = 2.42946 + 0.47513I$ $b = -1.32866 + 1.48883I$	$-1.34490 - 10.67560I$	0
$u = -0.609834 + 1.060780I$ $a = 0.177931 + 0.161657I$ $b = -0.302125 - 0.261634I$	$0.73031 + 4.93195I$	0
$u = -0.609834 - 1.060780I$ $a = 0.177931 - 0.161657I$ $b = -0.302125 + 0.261634I$	$0.73031 - 4.93195I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.22574$ $a = -0.0814514$ $b = 0.224379$	-2.40077	0
$u = -1.117300 + 0.515290I$ $a = 0.466977 - 0.272863I$ $b = -0.052580 - 0.460197I$	$-1.72491 + 1.17101I$	0
$u = -1.117300 - 0.515290I$ $a = 0.466977 + 0.272863I$ $b = -0.052580 + 0.460197I$	$-1.72491 - 1.17101I$	0
$u = -0.959072 + 0.770957I$ $a = -1.95935 + 0.55083I$ $b = 1.072950 + 0.489822I$	$3.29305 + 8.15797I$	0
$u = -0.959072 - 0.770957I$ $a = -1.95935 - 0.55083I$ $b = 1.072950 - 0.489822I$	$3.29305 - 8.15797I$	0
$u = -0.747090 + 0.168468I$ $a = -0.07406 - 3.74823I$ $b = -0.718374 - 0.537568I$	$-2.78392 + 5.74159I$	$0. - 10.59223I$
$u = -0.747090 - 0.168468I$ $a = -0.07406 + 3.74823I$ $b = -0.718374 + 0.537568I$	$-2.78392 - 5.74159I$	$0. + 10.59223I$
$u = -0.902433 + 0.842389I$ $a = -1.12496 - 1.08347I$ $b = -0.09084 + 1.94995I$	$5.11270 + 3.12910I$	0
$u = -0.902433 - 0.842389I$ $a = -1.12496 + 1.08347I$ $b = -0.09084 - 1.94995I$	$5.11270 - 3.12910I$	0
$u = -0.754820 + 0.121964I$ $a = 0.271990 + 0.539948I$ $b = -1.25951 + 0.76033I$	$-0.00920 + 1.99741I$	$-4.97461 - 6.58537I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.754820 - 0.121964I$ $a = 0.271990 - 0.539948I$ $b = -1.25951 - 0.76033I$	$-0.00920 - 1.99741I$	$-4.97461 + 6.58537I$
$u = 0.903929 + 0.852438I$ $a = -0.042771 + 0.573558I$ $b = 0.1024700 + 0.0912204I$	$3.42320 - 3.15870I$	0
$u = 0.903929 - 0.852438I$ $a = -0.042771 - 0.573558I$ $b = 0.1024700 - 0.0912204I$	$3.42320 + 3.15870I$	0
$u = 0.965949 + 0.791830I$ $a = 2.72917 + 0.39462I$ $b = -1.49793 + 1.37084I$	$0.30713 - 8.83619I$	0
$u = 0.965949 - 0.791830I$ $a = 2.72917 - 0.39462I$ $b = -1.49793 - 1.37084I$	$0.30713 + 8.83619I$	0
$u = 0.689091 + 0.261565I$ $a = 0.23738 - 2.29046I$ $b = 0.307364 - 0.189189I$	$1.11048 - 2.65576I$	$4.04594 + 9.58056I$
$u = 0.689091 - 0.261565I$ $a = 0.23738 + 2.29046I$ $b = 0.307364 + 0.189189I$	$1.11048 + 2.65576I$	$4.04594 - 9.58056I$
$u = -1.020860 + 0.774765I$ $a = -1.85604 + 0.67780I$ $b = 0.875622 + 1.093540I$	$3.90808 + 10.98490I$	0
$u = -1.020860 - 0.774765I$ $a = -1.85604 - 0.67780I$ $b = 0.875622 - 1.093540I$	$3.90808 - 10.98490I$	0
$u = -0.945068 + 0.879974I$ $a = -0.718309 - 0.709737I$ $b = 0.122845 + 0.926844I$	$0.40985 + 3.28937I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.945068 - 0.879974I$ $a = -0.718309 + 0.709737I$ $b = 0.122845 - 0.926844I$	$0.40985 - 3.28937I$	0
$u = -0.021045 + 0.707004I$ $a = 0.849935 + 0.171601I$ $b = -0.701171 - 0.584399I$	$0.84188 + 2.06256I$	$6.18345 - 3.30724I$
$u = -0.021045 - 0.707004I$ $a = 0.849935 - 0.171601I$ $b = -0.701171 + 0.584399I$	$0.84188 - 2.06256I$	$6.18345 + 3.30724I$
$u = 0.371008 + 0.597901I$ $a = -0.719356 - 0.149262I$ $b = -0.413504 - 1.025830I$	$-1.91335 - 2.81576I$	$0.44464 + 3.89047I$
$u = 0.371008 - 0.597901I$ $a = -0.719356 + 0.149262I$ $b = -0.413504 + 1.025830I$	$-1.91335 + 2.81576I$	$0.44464 - 3.89047I$
$u = 1.043550 + 0.771923I$ $a = -0.946648 - 0.702795I$ $b = 0.916796 - 0.215289I$	$3.41643 - 6.78870I$	0
$u = 1.043550 - 0.771923I$ $a = -0.946648 + 0.702795I$ $b = 0.916796 + 0.215289I$	$3.41643 + 6.78870I$	0
$u = -1.026060 + 0.795755I$ $a = 1.77087 - 0.63835I$ $b = -1.19886 - 0.91328I$	$6.4646 + 13.5453I$	0
$u = -1.026060 - 0.795755I$ $a = 1.77087 + 0.63835I$ $b = -1.19886 + 0.91328I$	$6.4646 - 13.5453I$	0
$u = 1.025510 + 0.798343I$ $a = -2.17818 - 0.44641I$ $b = 1.14532 - 1.34021I$	$1.4753 - 19.2542I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.025510 - 0.798343I$ $a = -2.17818 + 0.44641I$ $b = 1.14532 + 1.34021I$	$1.4753 + 19.2542I$	0
$u = 1.020690 + 0.808844I$ $a = 1.38714 + 0.43387I$ $b = -0.826405 + 0.853074I$	$6.60927 - 6.64188I$	0
$u = 1.020690 - 0.808844I$ $a = 1.38714 - 0.43387I$ $b = -0.826405 - 0.853074I$	$6.60927 + 6.64188I$	0
$u = -0.235041 + 0.606361I$ $a = -0.583250 - 1.254850I$ $b = 0.697950 + 0.782894I$	$-3.29450 + 3.57493I$	$-0.71465 - 4.68220I$
$u = -0.235041 - 0.606361I$ $a = -0.583250 + 1.254850I$ $b = 0.697950 - 0.782894I$	$-3.29450 - 3.57493I$	$-0.71465 + 4.68220I$
$u = -0.616277 + 0.094778I$ $a = 0.95146 + 2.29909I$ $b = 0.376211 + 1.070930I$	$0.488850 - 0.873464I$	$-0.30635 - 2.99542I$
$u = -0.616277 - 0.094778I$ $a = 0.95146 - 2.29909I$ $b = 0.376211 - 1.070930I$	$0.488850 + 0.873464I$	$-0.30635 + 2.99542I$
$u = -0.550352 + 0.231512I$ $a = -1.70642 + 1.54056I$ $b = 1.085420 - 0.526133I$	$-2.22788 - 3.99628I$	$0. - 2.38605I$
$u = -0.550352 - 0.231512I$ $a = -1.70642 - 1.54056I$ $b = 1.085420 + 0.526133I$	$-2.22788 + 3.99628I$	$0. + 2.38605I$
$u = 0.446303 + 0.353768I$ $a = -0.22409 + 2.16295I$ $b = -1.066460 + 0.466635I$	$-1.53047 + 3.88857I$	$1.63766 - 0.43600I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.446303 - 0.353768I$ $a = -0.22409 - 2.16295I$ $b = -1.066460 - 0.466635I$	$-1.53047 - 3.88857I$	$1.63766 + 0.43600I$
$u = 0.438822 + 0.314308I$ $a = 1.44178 - 0.12281I$ $b = -0.848750 - 0.067338I$	$1.71356 + 0.21175I$	$6.32854 + 2.24301I$
$u = 0.438822 - 0.314308I$ $a = 1.44178 + 0.12281I$ $b = -0.848750 + 0.067338I$	$1.71356 - 0.21175I$	$6.32854 - 2.24301I$
$u = -0.099602 + 0.525971I$ $a = -0.58831 + 1.66889I$ $b = 0.755169 - 0.982274I$	$-3.88259 - 1.74357I$	$-2.56304 + 2.88821I$
$u = -0.099602 - 0.525971I$ $a = -0.58831 - 1.66889I$ $b = 0.755169 + 0.982274I$	$-3.88259 + 1.74357I$	$-2.56304 - 2.88821I$
$u = -0.087064 + 0.446128I$ $a = 1.53865 + 0.55613I$ $b = -0.282786 - 0.627959I$	$0.12441 + 1.56920I$	$0.91923 - 3.30401I$
$u = -0.087064 - 0.446128I$ $a = 1.53865 - 0.55613I$ $b = -0.282786 + 0.627959I$	$0.12441 - 1.56920I$	$0.91923 + 3.30401I$

$$\text{II. } I_2^u = \langle -2u^{24} - 2u^{23} + \dots + b + 3u, 411u^{24} + 715u^{23} + \dots + 29a - 1052, u^{25} + u^{24} + \dots - 9u^2 + 1 \rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -14.1724u^{24} - 24.6552u^{23} + \dots + 50.2414u + 36.2759 \\ 2u^{24} + 2u^{23} + \dots + 31u^3 - 3u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -10.5862u^{24} - 18.8276u^{23} + \dots + 40.6207u + 28.1379 \\ 3.96552u^{24} + 4.06897u^{23} + \dots - 8.55172u - 2.34483 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -20.2414u^{24} - 29.5172u^{23} + \dots + 73.1379u + 31.5862 \\ 3u^{23} + 3u^{22} + \dots + 48u^2 - 7 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -4.68966u^{24} - 8.62069u^{23} + \dots + 4.96552u + 13.1034 \\ -8.13793u^{24} - 12.7241u^{23} + \dots + 26.7931u + 16.6207 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 6.68966u^{24} + 14.6207u^{23} + \dots - 20.9655u - 24.1034 \\ u^{23} + u^{22} + \dots - u - 6 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -12.6897u^{24} - 22.6207u^{23} + \dots + 45.9655u + 34.1034 \\ 5.13793u^{24} + 6.72414u^{23} + \dots - 12.7931u - 6.62069 \end{pmatrix}$$

(ii) Obstruction class = 1

$$\text{(iii) Cusp Shapes} = -\frac{1161}{29}u^{24} - \frac{1564}{29}u^{23} + \dots + \frac{3435}{29}u + \frac{1759}{29}$$

(iv) u -Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{25} - 9u^{24} + \dots + 18u - 1$
c_2	$u^{25} - u^{24} + \dots + 9u^2 - 1$
c_3	$u^{25} - u^{24} + \dots + 2u - 1$
c_4	$u^{25} - u^{24} + \dots - 4u - 2$
c_5	$u^{25} - 2u^{23} + \dots + 7u - 1$
c_6	$u^{25} + u^{24} + \dots - 9u^2 + 1$
c_7	$u^{25} + 9u^{24} + \dots + 18u + 1$
c_8	$u^{25} + u^{24} + \dots - 4u + 2$
c_9	$u^{25} + 13u^{24} + \dots + 2u + 1$
c_{10}	$u^{25} - 12u^{24} + \dots + 14u - 2$
c_{11}	$u^{25} + 4u^{24} + \dots + 6u - 1$
c_{12}	$u^{25} - 2u^{24} + \dots + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{25} + 19y^{24} + \dots + 26y - 1$
c_2, c_6	$y^{25} - 9y^{24} + \dots + 18y - 1$
c_3	$y^{25} + 7y^{24} + \dots - 10y - 1$
c_4, c_8	$y^{25} + 19y^{24} + \dots - 92y - 4$
c_5	$y^{25} - 4y^{24} + \dots + 17y - 1$
c_9	$y^{25} + 11y^{24} + \dots + 28y - 1$
c_{10}	$y^{25} + 12y^{24} + \dots - 8y - 4$
c_{11}	$y^{25} - 2y^{24} + \dots + 12y - 1$
c_{12}	$y^{25} + 10y^{24} + \dots - 7y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.853847 + 0.552587I$		
$a = 0.512253 + 1.148570I$	$-4.29244 - 2.21126I$	$-7.77753 + 4.59539I$
$b = 0.008849 + 1.124240I$		
$u = 0.853847 - 0.552587I$		
$a = 0.512253 - 1.148570I$	$-4.29244 + 2.21126I$	$-7.77753 - 4.59539I$
$b = 0.008849 - 1.124240I$		
$u = 0.956988 + 0.133981I$		
$a = 0.16781 + 1.76193I$	$-4.22319 - 5.45739I$	$-7.32513 + 7.71011I$
$b = -0.837945 + 0.690098I$		
$u = 0.956988 - 0.133981I$		
$a = 0.16781 - 1.76193I$	$-4.22319 + 5.45739I$	$-7.32513 - 7.71011I$
$b = -0.837945 - 0.690098I$		
$u = 0.763507 + 0.796122I$		
$a = 1.65998 + 0.36519I$	$3.51848 + 0.62563I$	$0.66859 - 1.39194I$
$b = -1.126830 + 0.115339I$		
$u = 0.763507 - 0.796122I$		
$a = 1.65998 - 0.36519I$	$3.51848 - 0.62563I$	$0.66859 + 1.39194I$
$b = -1.126830 - 0.115339I$		
$u = -0.821252 + 0.357299I$		
$a = -1.96111 - 0.57378I$	$-5.32296 + 1.50256I$	$-4.89188 - 5.84337I$
$b = 0.112682 + 0.993717I$		
$u = -0.821252 - 0.357299I$		
$a = -1.96111 + 0.57378I$	$-5.32296 - 1.50256I$	$-4.89188 + 5.84337I$
$b = 0.112682 - 0.993717I$		
$u = -0.631590 + 0.955154I$		
$a = -0.071440 + 0.175914I$	$0.76194 + 4.72903I$	$2.02160 + 5.84302I$
$b = 0.361981 + 0.060043I$		
$u = -0.631590 - 0.955154I$		
$a = -0.071440 - 0.175914I$	$0.76194 - 4.72903I$	$2.02160 - 5.84302I$
$b = 0.361981 - 0.060043I$		

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.823293 + 0.805651I$ $a = -1.98055 + 1.20635I$ $b = 1.48375 - 0.66357I$	$1.78089 - 3.71135I$	$0.66058 + 5.26542I$
$u = -0.823293 - 0.805651I$ $a = -1.98055 - 1.20635I$ $b = 1.48375 + 0.66357I$	$1.78089 + 3.71135I$	$0.66058 - 5.26542I$
$u = -1.083320 + 0.476847I$ $a = -0.278647 + 0.334114I$ $b = -0.081503 + 0.556369I$	$-1.65599 + 0.83727I$	$0.72626 + 9.94888I$
$u = -1.083320 - 0.476847I$ $a = -0.278647 - 0.334114I$ $b = -0.081503 - 0.556369I$	$-1.65599 - 0.83727I$	$0.72626 - 9.94888I$
$u = 0.895140 + 0.818131I$ $a = -0.937691 + 0.810428I$ $b = -0.10530 - 1.60239I$	$6.41867 - 3.05480I$	$8.71564 + 2.55565I$
$u = 0.895140 - 0.818131I$ $a = -0.937691 - 0.810428I$ $b = -0.10530 + 1.60239I$	$6.41867 + 3.05480I$	$8.71564 - 2.55565I$
$u = -0.948266 + 0.771353I$ $a = 2.59268 - 0.92005I$ $b = -1.43814 - 0.81492I$	$1.39289 + 9.64001I$	$-0.11573 - 10.25305I$
$u = -0.948266 - 0.771353I$ $a = 2.59268 + 0.92005I$ $b = -1.43814 + 0.81492I$	$1.39289 - 9.64001I$	$-0.11573 + 10.25305I$
$u = 0.991039 + 0.753305I$ $a = -1.25838 - 0.87715I$ $b = 1.073250 - 0.143001I$	$2.82116 - 6.47784I$	$-2.46367 + 5.33192I$
$u = 0.991039 - 0.753305I$ $a = -1.25838 + 0.87715I$ $b = 1.073250 + 0.143001I$	$2.82116 + 6.47784I$	$-2.46367 - 5.33192I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.24507$ $a = 0.0444701$ $b = 0.363774$	-2.31670	54.6010
$u = -0.571310 + 0.152655I$ $a = -0.54893 + 1.84217I$ $b = -0.749069 + 0.806018I$	$0.69245 + 1.64476I$	$4.36644 - 3.46206I$
$u = -0.571310 - 0.152655I$ $a = -0.54893 - 1.84217I$ $b = -0.749069 - 0.806018I$	$0.69245 - 1.64476I$	$4.36644 + 3.46206I$
$u = 0.541047 + 0.028394I$ $a = 0.08177 - 3.20013I$ $b = 1.116380 + 0.179913I$	$-2.37849 + 4.73207I$	$-3.38578 - 6.76282I$
$u = 0.541047 - 0.028394I$ $a = 0.08177 + 3.20013I$ $b = 1.116380 - 0.179913I$	$-2.37849 - 4.73207I$	$-3.38578 + 6.76282I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{25} - 9u^{24} + \dots + 18u - 1)(u^{137} + 40u^{136} + \dots + 4042u + 169)$
c_2	$(u^{25} - u^{24} + \dots + 9u^2 - 1)(u^{137} - 20u^{135} + \dots + 8u + 13)$
c_3	$(u^{25} - u^{24} + \dots + 2u - 1)(u^{137} + 2u^{136} + \dots - 31644u + 3869)$
c_4	$(u^{25} - u^{24} + \dots - 4u - 2)(u^{137} + 6u^{136} + \dots + 60u + 2)$
c_5	$(u^{25} - 2u^{23} + \dots + 7u - 1)(u^{137} + u^{136} + \dots + 11u + 1)$
c_6	$(u^{25} + u^{24} + \dots - 9u^2 + 1)(u^{137} - 20u^{135} + \dots + 8u + 13)$
c_7	$(u^{25} + 9u^{24} + \dots + 18u + 1)(u^{137} + 40u^{136} + \dots + 4042u + 169)$
c_8	$(u^{25} + u^{24} + \dots - 4u + 2)(u^{137} + 6u^{136} + \dots + 60u + 2)$
c_9	$(u^{25} + 13u^{24} + \dots + 2u + 1)(u^{137} - 12u^{136} + \dots + 48u + 1)$
c_{10}	$(u^{25} - 12u^{24} + \dots + 14u - 2)(u^{137} + 9u^{136} + \dots + 32u - 128)$
c_{11}	$(u^{25} + 4u^{24} + \dots + 6u - 1)(u^{137} + u^{136} + \dots + 760u + 7)$
c_{12}	$(u^{25} - 2u^{24} + \dots + u - 1)(u^{137} + 9u^{136} + \dots + 55158u + 5036)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^{25} + 19y^{24} + \dots + 26y - 1)$ $\cdot (y^{137} + 120y^{136} + \dots + 779962y - 28561)$
c_2, c_6	$(y^{25} - 9y^{24} + \dots + 18y - 1)(y^{137} - 40y^{136} + \dots + 4042y - 169)$
c_3	$(y^{25} + 7y^{24} + \dots - 10y - 1)$ $\cdot (y^{137} + 36y^{136} + \dots - 513688022y - 14969161)$
c_4, c_8	$(y^{25} + 19y^{24} + \dots - 92y - 4)(y^{137} + 100y^{136} + \dots - 848y - 4)$
c_5	$(y^{25} - 4y^{24} + \dots + 17y - 1)(y^{137} - 3y^{136} + \dots - 191y - 1)$
c_9	$(y^{25} + 11y^{24} + \dots + 28y - 1)(y^{137} + 12y^{136} + \dots - 696y - 1)$
c_{10}	$(y^{25} + 12y^{24} + \dots - 8y - 4)(y^{137} + 21y^{136} + \dots + 152576y - 16384)$
c_{11}	$(y^{25} - 2y^{24} + \dots + 12y - 1)(y^{137} - 13y^{136} + \dots + 530448y - 49)$
c_{12}	$(y^{25} + 10y^{24} + \dots - 7y - 1)$ $\cdot (y^{137} + 35y^{136} + \dots - 1685724212y - 25361296)$