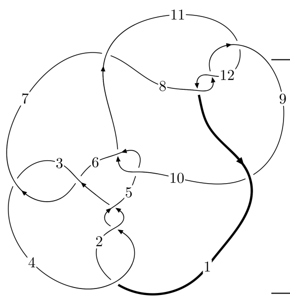
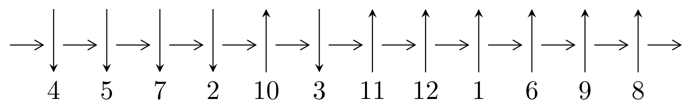
$12a_{0816}$ $(K12a_{0816})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$5,10 \xrightarrow[c_5]{} 3,6 \xrightarrow[c_6]{} 7 \xrightarrow[c_{10}]{} 11 \xrightarrow[c_7]{} 8 \xrightarrow[c_2]{} 2 \xrightarrow[c_4]{} 4 \xrightarrow[c_1]{} 1 \xrightarrow[c_9]{} 9 \xrightarrow[c_{12}]{} 12 \twoheadrightarrow c_3, c_8, c_{11}$$

Ideals for irreducible components[2] of $X_{\mathbf{par}}$

$$\begin{aligned}
I_1^u = \langle & 3.88375 \times 10^{234} u^{85} - 1.46902 \times 10^{234} u^{84} + \cdots + 2.70951 \times 10^{236} b + 2.78190 \times 10^{236}, \\
& 1.64525 \times 10^{236} u^{85} + 2.08852 \times 10^{236} u^{84} + \cdots + 5.41901 \times 10^{236} a + 7.89723 \times 10^{237}, \\
& u^{86} + 2u^{85} + \cdots + 352u + 64 \rangle \\
I_2^u = \langle & b + 1,\ u^5 - 4u^3 + u^2 + a + 4u - 3,\ u^6 + u^5 - 3u^4 - 2u^3 + 2u^2 - u - 1 \rangle
\end{aligned}$$

$$I_1^v = \langle a,\ 8v^5 + 21v^4 + 63v^3 + 21v^2 + 503b - v - 817,\ v^6 + 3v^5 + v^4 - 18v^3 - 7v^2 + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 98 representations.

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[1]The 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`).

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

I. $\boldsymbol{I_1^u = \langle 3.88 \times 10^{234}u^{85} - 1.47 \times 10^{234}u^{84} + \cdots + 2.71 \times 10^{236}b + 2.78 \times 10^{236},\ 1.65 \times 10^{236}u^{85} + 2.09 \times 10^{236}u^{84} + \cdots + 5.42 \times 10^{236}a + 7.90 \times 10^{237},\ u^{86} + 2u^{85} + \cdots + 352u + 64\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.303607u^{85} - 0.385406u^{84} + \cdots - 98.1776u - 14.5732 \\ -0.0143338u^{85} + 0.00542171u^{84} + \cdots - 2.27870u - 1.02672 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.400196u^{85} - 0.562734u^{84} + \cdots - 159.471u - 37.7347 \\ 0.0373459u^{85} + 0.124701u^{84} + \cdots + 33.4026u + 11.9056 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.364855u^{85} - 0.475874u^{84} + \cdots - 132.797u - 29.2352 \\ 0.103811u^{85} + 0.242890u^{84} + \cdots + 68.0341u + 21.4406 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.317940u^{85} - 0.379984u^{84} + \cdots - 100.456u - 15.5999 \\ -0.0143338u^{85} + 0.00542171u^{84} + \cdots - 2.27870u - 1.02672 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.000379134u^{85} - 0.00662213u^{84} + \cdots + 10.0057u + 7.46172 \\ 0.0314098u^{85} - 0.0261001u^{84} + \cdots - 6.20145u - 6.59007 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.313635u^{85} - 0.494466u^{84} + \cdots - 134.831u - 34.4302 \\ 0.0865603u^{85} + 0.0682676u^{84} + \cdots + 24.6403u + 3.30443 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.428449u^{85} - 0.506093u^{84} + \cdots - 128.967u - 23.4151 \\ -0.112532u^{85} - 0.102360u^{84} + \cdots - 14.4207u - 1.77881 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.518000u^{85} - 0.878705u^{84} + \cdots - 263.329u - 71.7071 \\ -0.388762u^{85} - 0.550043u^{84} + \cdots - 149.561u - 34.9025 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -1.25246u^{85} - 1.96111u^{84} + \cdots - 563.188u - 165.262$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4	$u^{86} - 10u^{85} + \cdots + 18u + 1$
c_3, c_6	$u^{86} + 4u^{85} + \cdots - 1152u^2 + 64$
c_5, c_{10}	$u^{86} + 2u^{85} + \cdots + 352u + 64$
c_7, c_9	$u^{86} - 4u^{85} + \cdots - 13134u + 977$
c_8, c_{11}, c_{12}	$u^{86} + 4u^{85} + \cdots - 8u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$y^{86} - 82y^{85} + \cdots - 478y + 1$
c_3, c_6	$y^{86} - 48y^{85} + \cdots - 147456y + 4096$
c_5, c_{10}	$y^{86} - 42y^{85} + \cdots - 107520y + 4096$
c_7, c_9	$y^{86} - 56y^{85} + \cdots - 14579676y + 954529$
c_8, c_{11}, c_{12}	$y^{86} + 72y^{85} + \cdots - 20y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.552054 + 0.828557I$ $a = 0.192966 - 0.000278I$ $b = 1.55396 + 0.16056I$	$-13.69310 - 2.82580I$	0
$u = 0.552054 - 0.828557I$ $a = 0.192966 + 0.000278I$ $b = 1.55396 - 0.16056I$	$-13.69310 + 2.82580I$	0
$u = 0.712992 + 0.675491I$ $a = 0.581320 + 0.515681I$ $b = -0.631213 - 0.658080I$	$-6.37937 + 0.07950I$	0
$u = 0.712992 - 0.675491I$ $a = 0.581320 - 0.515681I$ $b = -0.631213 + 0.658080I$	$-6.37937 - 0.07950I$	0
$u = 0.293714 + 0.923956I$ $a = 0.598122 + 0.230114I$ $b = -0.220725 - 0.596939I$	$1.77443 - 1.89708I$	0
$u = 0.293714 - 0.923956I$ $a = 0.598122 - 0.230114I$ $b = -0.220725 + 0.596939I$	$1.77443 + 1.89708I$	0
$u = -0.399332 + 0.964359I$ $a = 0.562555 - 0.274132I$ $b = -0.274017 + 0.680285I$	$-2.56815 + 5.72788I$	0
$u = -0.399332 - 0.964359I$ $a = 0.562555 + 0.274132I$ $b = -0.274017 - 0.680285I$	$-2.56815 - 5.72788I$	0
$u = -0.814919 + 0.658478I$ $a = -0.82638 + 1.33174I$ $b = -1.383480 - 0.068743I$	$-8.14347 - 2.53737I$	0
$u = -0.814919 - 0.658478I$ $a = -0.82638 - 1.33174I$ $b = -1.383480 + 0.068743I$	$-8.14347 + 2.53737I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.983266+0.394126I$ $a=\ \ 0.04078+1.47966I$ $b=-0.260699-0.690733I$	$0.29357-3.54409I$	0
$u=-0.983266-0.394126I$ $a=\ \ 0.04078-1.47966I$ $b=-0.260699+0.690733I$	$0.29357+3.54409I$	0
$u=-0.225473+0.906689I$ $a=\ \ 0.191216-0.000872I$ $b=\ \ 1.48450-0.07065I$	$-8.06829+1.47587I$	$-6.04730+0.I$
$u=-0.225473-0.906689I$ $a=\ \ 0.191216+0.000872I$ $b=\ \ 1.48450+0.07065I$	$-8.06829-1.47587I$	$-6.04730+0.I$
$u=-1.049590+0.241828I$ $a=\ \ 0.357510-0.885888I$ $b=-1.048150+0.593109I$	$-0.89394+2.01684I$	0
$u=-1.049590-0.241828I$ $a=\ \ 0.357510+0.885888I$ $b=-1.048150-0.593109I$	$-0.89394-2.01684I$	0
$u=-0.130183+0.912720I$ $a=\ \ 0.615451-0.146529I$ $b=-0.106806+0.503836I$	$-1.74508-1.81197I$	0
$u=-0.130183-0.912720I$ $a=\ \ 0.615451+0.146529I$ $b=-0.106806-0.503836I$	$-1.74508+1.81197I$	0
$u=\ \ 0.909805+0.583851I$ $a=-0.30401-1.55635I$ $b=-0.426541+0.738548I$	$-5.77290+4.80475I$	0
$u=\ \ 0.909805-0.583851I$ $a=-0.30401+1.55635I$ $b=-0.426541-0.738548I$	$-5.77290-4.80475I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.048040 + 0.370428I$ $a = 0.390246 + 0.782737I$ $b = -0.981638 - 0.659900I$	$2.46498 + 1.91776I$	0
$u = 1.048040 - 0.370428I$ $a = 0.390246 - 0.782737I$ $b = -0.981638 + 0.659900I$	$2.46498 - 1.91776I$	0
$u = 0.771535 + 0.431699I$ $a = -0.47760 - 1.71983I$ $b = -1.262540 + 0.145425I$	$-2.36374 + 1.81286I$	$0. - 3.83527I$
$u = 0.771535 - 0.431699I$ $a = -0.47760 + 1.71983I$ $b = -1.262540 - 0.145425I$	$-2.36374 - 1.81286I$	$0. + 3.83527I$
$u = 0.852981 + 0.159244I$ $a = 0.58828 - 1.49094I$ $b = -0.159548 + 0.473962I$	$1.120900 + 0.300961I$	$6.91660 - 0.58498I$
$u = 0.852981 - 0.159244I$ $a = 0.58828 + 1.49094I$ $b = -0.159548 - 0.473962I$	$1.120900 - 0.300961I$	$6.91660 + 0.58498I$
$u = 1.059140 + 0.410939I$ $a = -0.287658 - 1.211040I$ $b = -1.376810 + 0.289151I$	$-1.68586 + 0.96431I$	0
$u = 1.059140 - 0.410939I$ $a = -0.287658 + 1.211040I$ $b = -1.376810 - 0.289151I$	$-1.68586 - 0.96431I$	0
$u = -1.060240 + 0.459416I$ $a = 0.391196 - 0.717519I$ $b = -0.943184 + 0.714225I$	$-1.95224 - 5.90463I$	0
$u = -1.060240 - 0.459416I$ $a = 0.391196 + 0.717519I$ $b = -0.943184 - 0.714225I$	$-1.95224 + 5.90463I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.438702 + 0.719830I$ $a = -1.86531 - 1.41789I$ $b = -1.244600 - 0.118813I$	$-5.13889 - 4.02609I$	$-2.76635 + 0.76522I$
$u = 0.438702 - 0.719830I$ $a = -1.86531 + 1.41789I$ $b = -1.244600 + 0.118813I$	$-5.13889 + 4.02609I$	$-2.76635 - 0.76522I$
$u = -1.081380 + 0.516007I$ $a = -0.405516 + 1.145080I$ $b = -1.43564 - 0.25261I$	$1.40001 - 4.97319I$	0
$u = -1.081380 - 0.516007I$ $a = -0.405516 - 1.145080I$ $b = -1.43564 + 0.25261I$	$1.40001 + 4.97319I$	0
$u = -1.136010 + 0.403070I$ $a = -1.18436 - 1.39457I$ $b = 1.41697 + 0.15814I$	$-9.55306 + 0.49039I$	0
$u = -1.136010 - 0.403070I$ $a = -1.18436 + 1.39457I$ $b = 1.41697 - 0.15814I$	$-9.55306 - 0.49039I$	0
$u = -0.562219 + 0.524976I$ $a = 0.716658 - 0.329576I$ $b = 0.182504 + 0.015855I$	$-3.19093 - 1.95911I$	$3.32674 + 3.69322I$
$u = -0.562219 - 0.524976I$ $a = 0.716658 + 0.329576I$ $b = 0.182504 - 0.015855I$	$-3.19093 + 1.95911I$	$3.32674 - 3.69322I$
$u = 1.092220 + 0.579762I$ $a = -0.466720 - 1.099830I$ $b = -1.46979 + 0.22913I$	$-3.18556 + 9.02341I$	0
$u = 1.092220 - 0.579762I$ $a = -0.466720 + 1.099830I$ $b = -1.46979 - 0.22913I$	$-3.18556 - 9.02341I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.187690+0.506855I$ $a=-0.111325+1.217970I$ $b=-0.237680-0.887129I$	$1.53780-3.15145I$	0
$u=-1.187690-0.506855I$ $a=-0.111325-1.217970I$ $b=-0.237680+0.887129I$	$1.53780+3.15145I$	0
$u=\ \ 1.291170+0.123828I$ $a=\ \ 0.278328+0.884185I$ $b=\ \ 0.269267-0.656632I$	$3.52569-2.53556I$	0
$u=\ \ 1.291170-0.123828I$ $a=\ \ 0.278328-0.884185I$ $b=\ \ 0.269267+0.656632I$	$3.52569+2.53556I$	0
$u=-0.657648+0.222079I$ $a=\ \ 0.190415+0.000646I$ $b=\ \ 1.68329-0.04881I$	$-11.53680-3.32788I$	$1.60100+7.68257I$
$u=-0.657648-0.222079I$ $a=\ \ 0.190415-0.000646I$ $b=\ \ 1.68329+0.04881I$	$-11.53680+3.32788I$	$1.60100-7.68257I$
$u=\ \ 1.127830+0.663427I$ $a=-0.35766+1.65601I$ $b=\ \ 1.47079-0.27396I$	$-11.8702+8.4794I$	0
$u=\ \ 1.127830-0.663427I$ $a=-0.35766-1.65601I$ $b=\ \ 1.47079+0.27396I$	$-11.8702-8.4794I$	0
$u=-1.294930+0.226061I$ $a=\ \ 0.289669-0.819710I$ $b=\ \ 0.347991+0.605697I$	$7.12157-1.76447I$	0
$u=-1.294930-0.226061I$ $a=\ \ 0.289669+0.819710I$ $b=\ \ 0.347991-0.605697I$	$7.12157+1.76447I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.231000 + 0.473921I$ $a = -0.82743 + 1.23132I$ $b = 1.381250 - 0.202296I$	$-3.88741 + 2.87017I$	0
$u = 1.231000 - 0.473921I$ $a = -0.82743 - 1.23132I$ $b = 1.381250 + 0.202296I$	$-3.88741 - 2.87017I$	0
$u = -0.432450 + 1.250560I$ $a = 0.193237 - 0.006450I$ $b = 1.367100 - 0.183599I$	$-6.49234 + 0.65249I$	0
$u = -0.432450 - 1.250560I$ $a = 0.193237 + 0.006450I$ $b = 1.367100 + 0.183599I$	$-6.49234 - 0.65249I$	0
$u = -0.353875 + 0.574365I$ $a = -2.39311 + 2.12630I$ $b = -1.150500 + 0.085662I$	$-0.680663 + 0.581964I$	$4.76633 + 3.68087I$
$u = -0.353875 - 0.574365I$ $a = -2.39311 - 2.12630I$ $b = -1.150500 - 0.085662I$	$-0.680663 - 0.581964I$	$4.76633 - 3.68087I$
$u = 1.189690 + 0.590585I$ $a = -0.192525 - 1.202200I$ $b = -0.293585 + 0.928049I$	$4.52893 + 7.39783I$	0
$u = 1.189690 - 0.590585I$ $a = -0.192525 + 1.202200I$ $b = -0.293585 - 0.928049I$	$4.52893 - 7.39783I$	0
$u = 1.294060 + 0.316520I$ $a = 0.291115 + 0.764351I$ $b = 0.414957 - 0.554533I$	$2.91745 + 6.05254I$	0
$u = 1.294060 - 0.316520I$ $a = 0.291115 - 0.764351I$ $b = 0.414957 + 0.554533I$	$2.91745 - 6.05254I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.537174 + 1.231980I$ $a = 0.196295 + 0.005454I$ $b = 1.389820 + 0.235157I$	$-3.37770 - 4.95391I$	0
$u = 0.537174 - 1.231980I$ $a = 0.196295 - 0.005454I$ $b = 1.389820 - 0.235157I$	$-3.37770 + 4.95391I$	0
$u = -1.181470 + 0.644258I$ $a = -0.244491 + 1.194170I$ $b = -0.333360 - 0.947743I$	$-0.12892 - 11.58520I$	0
$u = -1.181470 - 0.644258I$ $a = -0.244491 - 1.194170I$ $b = -0.333360 + 0.947743I$	$-0.12892 + 11.58520I$	0
$u = -0.602863 + 1.211500I$ $a = 0.197803 - 0.003918I$ $b = 1.41379 - 0.26593I$	$-7.97081 + 9.17889I$	0
$u = -0.602863 - 1.211500I$ $a = 0.197803 + 0.003918I$ $b = 1.41379 + 0.26593I$	$-7.97081 - 9.17889I$	0
$u = -1.232100 + 0.594842I$ $a = -0.51016 - 1.34439I$ $b = 1.40089 + 0.26628I$	$-4.99770 - 7.01531I$	0
$u = -1.232100 - 0.594842I$ $a = -0.51016 + 1.34439I$ $b = 1.40089 - 0.26628I$	$-4.99770 + 7.01531I$	0
$u = -0.560073 + 0.243224I$ $a = 1.11682 + 2.93594I$ $b = -0.400437 - 0.305942I$	$-3.84146 + 2.44487I$	$2.67833 + 5.70811I$
$u = -0.560073 - 0.243224I$ $a = 1.11682 - 2.93594I$ $b = -0.400437 + 0.305942I$	$-3.84146 - 2.44487I$	$2.67833 - 5.70811I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.447171+0.368366I$ $a=\ 0.977140-0.529183I$ $b=-0.649137+0.321962I$	$-1.244520+0.136004I$	$-5.67462+0.66860I$
$u=-0.447171-0.368366I$ $a=\ 0.977140+0.529183I$ $b=-0.649137-0.321962I$	$-1.244520-0.136004I$	$-5.67462-0.66860I$
$u=\ 0.559835$ $a=\ 0.190472$ $b=\ 1.67112$	-7.43832	13.1970
$u=-1.26876+0.73301I$ $a=-0.171599-1.310850I$ $b=\ 1.42110+0.35592I$	$-3.74537-7.60591I$	0
$u=-1.26876-0.73301I$ $a=-0.171599+1.310850I$ $b=\ 1.42110-0.35592I$	$-3.74537+7.60591I$	0
$u=-1.22662+0.81031I$ $a=-0.010802-1.395770I$ $b=\ 1.47568+0.37982I$	$-5.9049-16.3706I$	0
$u=-1.22662-0.81031I$ $a=-0.010802+1.395770I$ $b=\ 1.47568-0.37982I$	$-5.9049+16.3706I$	0
$u=\ 1.24904+0.78295I$ $a=-0.069120+1.354280I$ $b=\ 1.45236-0.37556I$	$-1.03547+12.08560I$	0
$u=\ 1.24904-0.78295I$ $a=-0.069120-1.354280I$ $b=\ 1.45236+0.37556I$	$-1.03547-12.08560I$	0
$u=\ 0.099100+0.510038I$ $a=-5.06181-1.25504I$ $b=-1.001060-0.128912I$	$-4.35085+2.48127I$	$-12.9227-14.9608I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.099100 - 0.510038I$ $a = -5.06181 + 1.25504I$ $b = -1.001060 + 0.128912I$	$-4.35085 - 2.48127I$	$-12.9227 + 14.9608I$
$u = 0.446361$ $a = 1.34862$ $b = -0.0485703$	0.791292	12.9620
$u = -0.390544$ $a = 2.53371$ $b = -0.859860$	-1.16619	-12.5130
$u = 1.68218 + 0.12717I$ $a = -0.651799 + 0.146716I$ $b = 1.190290 - 0.040584I$	$1.47173 + 4.79342I$	0
$u = 1.68218 - 0.12717I$ $a = -0.651799 - 0.146716I$ $b = 1.190290 + 0.040584I$	$1.47173 - 4.79342I$	0
$u = -1.70399$ $a = -0.648277$ $b = 1.18657$	5.42800	0

II. $I_2^u = \langle b+1,\ u^5-4u^3+u^2+a+4u-3,\ u^6+u^5-3u^4-2u^3+2u^2-u-1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-u^5+4u^3-u^2-4u+3\\-1\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-u^2+1\\u^4-2u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-u^5+4u^3-u^2-4u+2\\-1\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u^5+4u^3-u^2-4u+3\\-1\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-u^5+2u^3+u\\u^5-3u^3+u\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -7u^5-3u^4+27u^3+5u^2-24u+14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^6$
c_3, c_6	u^6
c_4	$(u+1)^6$
c_5, c_7, c_9	$u^6+u^5-3u^4-2u^3+2u^2-u-1$
c_8	$u^6-u^5+3u^4-2u^3+2u^2-u-1$
c_{10}	$u^6-u^5-3u^4+2u^3+2u^2+u-1$
c_{11}, c_{12}	$u^6+u^5+3u^4+2u^3+2u^2+u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^6$
c_3, c_6	y^6
c_5, c_7, c_9 c_{10}	$y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1$
c_8, c_{11}, c_{12}	$y^6 + 5y^5 + 9y^4 + 4y^3 - 6y^2 - 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.493180 + 0.575288I$ $a = -0.26610 - 1.72116I$ $b = -1.00000$	$-4.60518 + 1.97241I$	$-6.63014 - 2.86834I$
$u = 0.493180 - 0.575288I$ $a = -0.26610 + 1.72116I$ $b = -1.00000$	$-4.60518 - 1.97241I$	$-6.63014 + 2.86834I$
$u = -0.483672$ $a = 4.27462$ $b = -1.00000$	-0.906083	23.7440
$u = -1.52087 + 0.16310I$ $a = 0.417699 + 0.090629I$ $b = -1.00000$	$2.05064 - 4.59213I$	$5.72906 + 1.01197I$
$u = -1.52087 - 0.16310I$ $a = 0.417699 - 0.090629I$ $b = -1.00000$	$2.05064 + 4.59213I$	$5.72906 - 1.01197I$
$u = 1.53904$ $a = 0.422181$ $b = -1.00000$	6.01515	10.0580

III.

$$\boldsymbol{I_1^v = \langle a,\ 8v^5+21v^4+63v^3+21v^2+503b-v-817,\ v^6+3v^5+v^4-18v^3-7v^2+1\rangle}$$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0 \\ -0.0159046v^5 - 0.0417495v^4 + \cdots + 0.00198807v + 1.62425 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 1 \\ -0.0159046v^5 - 0.0417495v^4 + \cdots + 0.00198807v + 2.62425 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.127237v^5 - 0.333996v^4 + \cdots + 0.0159046v + 0.994036 \\ -0.0159046v^5 - 0.0417495v^4 + \cdots + 0.00198807v + 2.62425 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0159046v^5 - 0.0417495v^4 + \cdots + 0.00198807v + 1.62425 \\ -0.0159046v^5 - 0.0417495v^4 + \cdots + 0.00198807v + 1.62425 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0159046v^5 + 0.0417495v^4 + \cdots - 0.00198807v - 1.62425 \\ 0.0159046v^5 + 0.0417495v^4 + \cdots - 0.00198807v - 2.62425 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1 \\ 0.0159046v^5 + 0.0417495v^4 + \cdots - 0.00198807v - 2.62425 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.00596421v^5 - 0.109344v^4 + \cdots + 3.62425v + 0.0159046 \\ 0.0178926v^5 - 0.328032v^4 + \cdots + 6.87276v + 0.0477137 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.524851v^5 - 1.37773v^4 + \cdots + 1.06561v - 1.39960 \\ -1.00199v^5 - 2.63022v^4 + \cdots + 0.125249v - 2.67197 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{12}{503}v^5 + \frac{283}{503}v^4 + \frac{849}{503}v^3 - \frac{220}{503}v^2 - \frac{3774}{503}v - \frac{4495}{503}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_3	$(u^2 + u - 1)^3$
c_4, c_6	$(u^2 - u - 1)^3$
c_5, c_{10}	u^6
c_7, c_9	$(u^3 - u^2 + 1)^2$
c_8	$(u^3 + u^2 + 2u + 1)^2$
c_{11}, c_{12}	$(u^3 - u^2 + 2u - 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_6	$(y^2 - 3y + 1)^3$
c_5, c_{10}	y^6
c_7, c_9	$(y^3 - y^2 + 2y - 1)^2$
c_8, c_{11}, c_{12}	$(y^3 + 3y^2 + 2y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -0.335152 + 0.284512I$ $a = 0$ $b = 1.61803$	$-11.90680 - 2.82812I$	$-6.38118 - 1.93520I$
$v = -0.335152 - 0.284512I$ $a = 0$ $b = 1.61803$	$-11.90680 + 2.82812I$	$-6.38118 + 1.93520I$
$v = 0.288338$ $a = 0$ $b = 1.61803$	-7.76919	-11.0920
$v = 1.97630$ $a = 0$ $b = -0.618034$	0.126494	-3.14230
$v = -2.29716 + 1.95007I$ $a = 0$ $b = -0.618034$	$-4.01109 - 2.82812I$	$-7.00182 + 11.83005I$
$v = -2.29716 - 1.95007I$ $a = 0$ $b = -0.618034$	$-4.01109 + 2.82812I$	$-7.00182 - 11.83005I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2	$((u-1)^6)(u^2+u-1)^3(u^{86}-10u^{85}+\cdots+18u+1)$
c_3	$u^6(u^2+u-1)^3(u^{86}+4u^{85}+\cdots-1152u^2+64)$
c_4	$((u+1)^6)(u^2-u-1)^3(u^{86}-10u^{85}+\cdots+18u+1)$
c_5	$u^6(u^6+u^5+\cdots-u-1)(u^{86}+2u^{85}+\cdots+352u+64)$
c_6	$u^6(u^2-u-1)^3(u^{86}+4u^{85}+\cdots-1152u^2+64)$
c_7, c_9	$(u^3-u^2+1)^2(u^6+u^5-3u^4-2u^3+2u^2-u-1)$ $\cdot(u^{86}-4u^{85}+\cdots-13134u+977)$
c_8	$(u^3+u^2+2u+1)^2(u^6-u^5+3u^4-2u^3+2u^2-u-1)$ $\cdot(u^{86}+4u^{85}+\cdots-8u+1)$
c_{10}	$u^6(u^6-u^5+\cdots+u-1)(u^{86}+2u^{85}+\cdots+352u+64)$
c_{11}, c_{12}	$(u^3-u^2+2u-1)^2(u^6+u^5+3u^4+2u^3+2u^2+u-1)$ $\cdot(u^{86}+4u^{85}+\cdots-8u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$((y-1)^6)(y^2-3y+1)^3(y^{86}-82y^{85}+\cdots-478y+1)$
c_3, c_6	$y^6(y^2-3y+1)^3(y^{86}-48y^{85}+\cdots-147456y+4096)$
c_5, c_{10}	$y^6(y^6-7y^5+17y^4-16y^3+6y^2-5y+1)$ $\cdot(y^{86}-42y^{85}+\cdots-107520y+4096)$
c_7, c_9	$(y^3-y^2+2y-1)^2(y^6-7y^5+17y^4-16y^3+6y^2-5y+1)$ $\cdot(y^{86}-56y^{85}+\cdots-14579676y+954529)$
c_8, c_{11}, c_{12}	$(y^3+3y^2+2y-1)^2(y^6+5y^5+9y^4+4y^3-6y^2-5y+1)$ $\cdot(y^{86}+72y^{85}+\cdots-20y+1)$