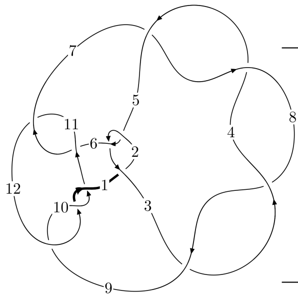
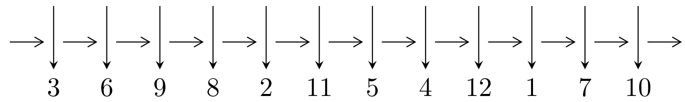
$12a_{0355}$ ($K12a_{0355}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I^u_1 = \langle 8.94586 \times 10^{64} u^{73} - 2.69400 \times 10^{64} u^{72} + \cdots + 1.31582 \times 10^{66} b + 4.80004 \times 10^{66},$$
$$5.16081 \times 10^{65} u^{73} + 2.32979 \times 10^{65} u^{72} + \cdots + 1.31582 \times 10^{66} a - 4.81901 \times 10^{66},\ u^{74} + 2u^{73} + \cdots - 20u -$$
$$I^u_2 = \langle 2u^4 - 3u^3 + 8u^2 + 3b - 7u + 5,\ 2u^4 - 3u^3 + 8u^2 + 3a - 7u + 5,\ u^5 - u^4 + 4u^3 - 3u^2 + 3u - 1\rangle$$
$$I^u_3 = \langle -au + 11b - 8a + 4u - 1,\ 2a^2 + au - 2a + 7u + 9,\ u^2 + 2\rangle$$

$$I^v_1 = \langle a,\ b + v + 2,\ v^2 + 3v + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 85 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. $I^u_1 =$

$\langle 8.95\times10^{64}u^{73}-2.69\times10^{64}u^{72}+\cdots+1.32\times10^{66}b+4.80\times10^{66},\ 5.16\times10^{65}u^{73}+2.33\times10^{65}u^{72}+\cdots+1.32\times10^{66}a-4.82\times10^{66},\ u^{74}+2u^{73}+\cdots-20u-4\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u^2+1\\-u^4-2u^2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.392213u^{73}-0.177060u^{72}+\cdots+27.1492u+3.66236\\-0.0679870u^{73}+0.0204739u^{72}+\cdots-8.72485u-3.64795\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.355590u^{73}-0.176374u^{72}+\cdots+34.8706u+5.46603\\-0.0313639u^{73}+0.0211600u^{72}+\cdots-1.00340u-1.84428\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.852587u^{73}-1.27210u^{72}+\cdots+13.2517u+3.41225\\0.207785u^{73}+0.612327u^{72}+\cdots-5.79693u-0.899362\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1.17691u^{73}+1.95949u^{72}+\cdots-19.1812u-3.66683\\-0.0813988u^{73}-0.326325u^{72}+\cdots-7.72533u+0.765144\end{pmatrix}$$
$$a_2 = \begin{pmatrix}1.04202u^{73}+1.78916u^{72}+\cdots-30.0854u-4.47897\\0.0488339u^{73}+0.413592u^{72}+\cdots+12.6335u+1.99163\end{pmatrix}$$
$$a_1 = \begin{pmatrix}1.21027u^{73}+2.52965u^{72}+\cdots-18.7639u-4.59000\\0.149898u^{73}+0.645216u^{72}+\cdots+0.284782u-0.278393\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3.89182u^{73}+7.30859u^{72}+\cdots-106.915u-60.8282$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{74} + 36u^{73} + \cdots + 9145u + 361$
c_2, c_5	$u^{74} + 4u^{73} + \cdots + 81u + 19$
c_3, c_4, c_7 c_8	$u^{74} - 2u^{73} + \cdots + 20u - 4$
c_6, c_{11}	$u^{74} - 2u^{73} + \cdots + 768u - 288$
c_9, c_{10}, c_{12}	$u^{74} - 9u^{73} + \cdots + 76u + 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{74} + 12y^{73} + \cdots - 14397001y + 130321$
c_2, c_5	$y^{74} - 36y^{73} + \cdots - 9145y + 361$
c_3, c_4, c_7 c_8	$y^{74} + 86y^{73} + \cdots - 144y + 16$
c_6, c_{11}	$y^{74} - 42y^{73} + \cdots - 2096640y + 82944$
c_9, c_{10}, c_{12}	$y^{74} - 71y^{73} + \cdots + 578y + 81$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.607505 + 0.741468I$ $a = -0.183425 - 1.058720I$ $b = -1.40832 - 0.47940I$	$-4.07736 - 6.36026I$	0
$u = 0.607505 - 0.741468I$ $a = -0.183425 + 1.058720I$ $b = -1.40832 + 0.47940I$	$-4.07736 + 6.36026I$	0
$u = -0.667561 + 0.682290I$ $a = 0.256038 - 1.207670I$ $b = 1.72165 - 0.74796I$	$-6.73194 + 12.03370I$	0
$u = -0.667561 - 0.682290I$ $a = 0.256038 + 1.207670I$ $b = 1.72165 + 0.74796I$	$-6.73194 - 12.03370I$	0
$u = -0.559459 + 0.669706I$ $a = -0.35510 + 1.56159I$ $b = -1.65441 + 0.91662I$	$-0.91245 + 7.70837I$	0
$u = -0.559459 - 0.669706I$ $a = -0.35510 - 1.56159I$ $b = -1.65441 - 0.91662I$	$-0.91245 - 7.70837I$	0
$u = -0.038593 + 0.865679I$ $a = -0.593774 + 0.924728I$ $b = 0.028979 + 0.303137I$	$2.31614 - 1.35523I$	$-12.00000 + 0.I$
$u = -0.038593 - 0.865679I$ $a = -0.593774 - 0.924728I$ $b = 0.028979 - 0.303137I$	$2.31614 + 1.35523I$	$-12.00000 + 0.I$
$u = 0.360711 + 0.782136I$ $a = 0.797293 + 0.395622I$ $b = 0.224581 - 0.244946I$	$1.68880 - 3.09277I$	0
$u = 0.360711 - 0.782136I$ $a = 0.797293 - 0.395622I$ $b = 0.224581 + 0.244946I$	$1.68880 + 3.09277I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.773386+0.324218I$ $a=-0.325616+0.996634I$ $b=-1.43090-0.20161I$	$-7.80941-7.24256I$	$-12.00000+0.I$
$u=-0.773386-0.324218I$ $a=-0.325616-0.996634I$ $b=-1.43090+0.20161I$	$-7.80941+7.24256I$	$-12.00000+0.I$
$u=\ 0.410374+0.690476I$ $a=\ 0.079542+1.327180I$ $b=\ 1.194690+0.654281I$	$1.22679-2.85228I$	$-8.14859+5.24888I$
$u=\ 0.410374-0.690476I$ $a=\ 0.079542-1.327180I$ $b=\ 1.194690-0.654281I$	$1.22679+2.85228I$	$-8.14859-5.24888I$
$u=\ 0.514460+0.613164I$ $a=-1.102640-0.882328I$ $b=-0.253876+0.423223I$	$-3.73773-5.34029I$	$-14.6182+6.5473I$
$u=\ 0.514460-0.613164I$ $a=-1.102640+0.882328I$ $b=-0.253876-0.423223I$	$-3.73773+5.34029I$	$-14.6182-6.5473I$
$u=-0.436354+0.667310I$ $a=\ 0.283686-0.895813I$ $b=\ 1.52973+0.27951I$	$-9.67609+2.66695I$	$-17.4503-3.9305I$
$u=-0.436354-0.667310I$ $a=\ 0.283686+0.895813I$ $b=\ 1.52973-0.27951I$	$-9.67609-2.66695I$	$-17.4503+3.9305I$
$u=\ 0.382623+1.141660I$ $a=-0.409174-0.900128I$ $b=-0.604968-0.087795I$	$-1.49710-2.18136I$	0
$u=\ 0.382623-1.141660I$ $a=-0.409174+0.900128I$ $b=-0.604968+0.087795I$	$-1.49710+2.18136I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.761356 + 0.203683I$ $a = -0.133816 + 0.674262I$ $b = 1.153300 - 0.116691I$	$-5.69528 + 1.81465I$	$-16.3182 + 0.I$
$u = 0.761356 - 0.203683I$ $a = -0.133816 - 0.674262I$ $b = 1.153300 + 0.116691I$	$-5.69528 - 1.81465I$	$-16.3182 + 0.I$
$u = -0.429289 + 0.586607I$ $a = 0.16786 - 2.19168I$ $b = 1.30415 - 1.08343I$	$-2.40757 + 2.56289I$	$-14.9241 - 4.9642I$
$u = -0.429289 - 0.586607I$ $a = 0.16786 + 2.19168I$ $b = 1.30415 + 1.08343I$	$-2.40757 - 2.56289I$	$-14.9241 + 4.9642I$
$u = -0.638318 + 0.268989I$ $a = 0.405828 - 1.016150I$ $b = 1.49765 + 0.09427I$	$-2.09894 - 3.64746I$	$-14.7101 + 4.2800I$
$u = -0.638318 - 0.268989I$ $a = 0.405828 + 1.016150I$ $b = 1.49765 - 0.09427I$	$-2.09894 + 3.64746I$	$-14.7101 - 4.2800I$
$u = -0.083637 + 1.344550I$ $a = -0.77219 + 1.92354I$ $b = -0.62622 + 1.38019I$	$2.73777 - 1.04981I$	0
$u = -0.083637 - 1.344550I$ $a = -0.77219 - 1.92354I$ $b = -0.62622 - 1.38019I$	$2.73777 + 1.04981I$	0
$u = -0.312075 + 1.325480I$ $a = 0.811130 - 1.137160I$ $b = 0.722128 - 0.253750I$	$-2.60689 - 3.35324I$	0
$u = -0.312075 - 1.325480I$ $a = 0.811130 + 1.137160I$ $b = 0.722128 + 0.253750I$	$-2.60689 + 3.35324I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.545002 + 0.321138I$ $a = -0.082844 - 0.488685I$ $b = 0.990683 + 0.671822I$	$-4.59270 + 1.67311I$	$-16.9582 + 0.3985I$
$u = 0.545002 - 0.321138I$ $a = -0.082844 + 0.488685I$ $b = 0.990683 - 0.671822I$	$-4.59270 - 1.67311I$	$-16.9582 - 0.3985I$
$u = -0.325449 + 0.532358I$ $a = 0.59075 - 1.40862I$ $b = -0.224777 - 0.237458I$	$-1.49527 + 1.17529I$	$-9.83671 - 1.84843I$
$u = -0.325449 - 0.532358I$ $a = 0.59075 + 1.40862I$ $b = -0.224777 + 0.237458I$	$-1.49527 - 1.17529I$	$-9.83671 + 1.84843I$
$u = 0.044226 + 0.581685I$ $a = 0.42124 - 2.21522I$ $b = -0.434104 - 1.036480I$	$-0.913331 + 0.906579I$	$-10.85003 - 0.71233I$
$u = 0.044226 - 0.581685I$ $a = 0.42124 + 2.21522I$ $b = -0.434104 + 1.036480I$	$-0.913331 - 0.906579I$	$-10.85003 + 0.71233I$
$u = 0.08277 + 1.44936I$ $a = -2.31320 - 0.95840I$ $b = -2.80340 - 1.07180I$	$1.013510 - 0.325527I$	0
$u = 0.08277 - 1.44936I$ $a = -2.31320 + 0.95840I$ $b = -2.80340 + 1.07180I$	$1.013510 + 0.325527I$	0
$u = -0.382429 + 0.362260I$ $a = -0.434039 + 0.798270I$ $b = -1.72137 - 0.26154I$	$-3.09747 + 0.40995I$	$-17.3230 - 6.9039I$
$u = -0.382429 - 0.362260I$ $a = -0.434039 - 0.798270I$ $b = -1.72137 + 0.26154I$	$-3.09747 - 0.40995I$	$-17.3230 + 6.9039I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.501836 + 0.000176I$ $a = 0.258344 + 0.412671I$ $b = -0.700497 - 0.288592I$	$-0.628535 + 0.108862I$	$-11.90695 + 0.35188I$
$u = 0.501836 - 0.000176I$ $a = 0.258344 - 0.412671I$ $b = -0.700497 + 0.288592I$	$-0.628535 - 0.108862I$	$-11.90695 - 0.35188I$
$u = -0.06225 + 1.50268I$ $a = 0.35254 - 2.42780I$ $b = 0.292023 - 1.218950I$	$-4.75549 + 1.52900I$	0
$u = -0.06225 - 1.50268I$ $a = 0.35254 + 2.42780I$ $b = 0.292023 + 1.218950I$	$-4.75549 - 1.52900I$	0
$u = -0.07068 + 1.52465I$ $a = 1.88422 - 0.82743I$ $b = 2.17873 - 0.30315I$	$3.33353 + 1.76863I$	0
$u = -0.07068 - 1.52465I$ $a = 1.88422 + 0.82743I$ $b = 2.17873 + 0.30315I$	$3.33353 - 1.76863I$	0
$u = -0.362675 + 0.286458I$ $a = 1.62379 + 2.91989I$ $b = -0.876997 + 0.508032I$	$-10.87560 + 0.29586I$	$-20.8413 - 9.3211I$
$u = -0.362675 - 0.286458I$ $a = 1.62379 - 2.91989I$ $b = -0.876997 - 0.508032I$	$-10.87560 - 0.29586I$	$-20.8413 + 9.3211I$
$u = -0.09170 + 1.56641I$ $a = 0.106439 + 0.604211I$ $b = 0.786542 + 0.160086I$	$5.71104 + 2.67349I$	0
$u = -0.09170 - 1.56641I$ $a = 0.106439 - 0.604211I$ $b = 0.786542 - 0.160086I$	$5.71104 - 2.67349I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.04751 + 1.56902I$ $a = 0.61041 + 2.24346I$ $b = 0.99106 + 1.54336I$	$6.42184 + 0.33972I$	0
$u = 0.04751 - 1.56902I$ $a = 0.61041 - 2.24346I$ $b = 0.99106 - 1.54336I$	$6.42184 - 0.33972I$	0
$u = -0.11939 + 1.57046I$ $a = -0.79528 + 2.64599I$ $b = -1.06004 + 1.80892I$	$4.90324 + 4.54099I$	0
$u = -0.11939 - 1.57046I$ $a = -0.79528 - 2.64599I$ $b = -1.06004 - 1.80892I$	$4.90324 - 4.54099I$	0
$u = 0.14833 + 1.57361I$ $a = 0.473364 - 0.025225I$ $b = -0.351936 - 0.410786I$	$3.62172 - 7.75592I$	0
$u = 0.14833 - 1.57361I$ $a = 0.473364 + 0.025225I$ $b = -0.351936 + 0.410786I$	$3.62172 + 7.75592I$	0
$u = -0.16764 + 1.59281I$ $a = 1.15342 - 2.36244I$ $b = 1.61348 - 1.60654I$	$6.70349 + 10.40740I$	0
$u = -0.16764 - 1.59281I$ $a = 1.15342 + 2.36244I$ $b = 1.61348 + 1.60654I$	$6.70349 - 10.40740I$	0
$u = 0.12065 + 1.59882I$ $a = -0.96141 - 1.83317I$ $b = -1.43763 - 1.18663I$	$9.01239 - 4.83964I$	0
$u = 0.12065 - 1.59882I$ $a = -0.96141 + 1.83317I$ $b = -1.43763 + 1.18663I$	$9.01239 + 4.83964I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.13360+1.59895I$ $a=-1.44072+0.67557I$ $b=-1.80299-0.01955I$	$-1.95351+4.80687I$	0
$u=-0.13360-1.59895I$ $a=-1.44072-0.67557I$ $b=-1.80299+0.01955I$	$-1.95351-4.80687I$	0
$u=-0.21190+1.59846I$ $a=-1.20844+2.04050I$ $b=-1.81241+1.29307I$	$0.8816+15.3259I$	0
$u=-0.21190-1.59846I$ $a=-1.20844-2.04050I$ $b=-1.81241-1.29307I$	$0.8816-15.3259I$	0
$u=\ 0.18569+1.61660I$ $a=\ 1.01642+1.53262I$ $b=\ 1.55579+0.86892I$	$3.86130-9.35513I$	0
$u=\ 0.18569-1.61660I$ $a=\ 1.01642-1.53262I$ $b=\ 1.55579-0.86892I$	$3.86130+9.35513I$	0
$u=-0.02145+1.62935I$ $a=\ 0.039433-0.379694I$ $b=-0.521747-0.073738I$	$10.84750-1.02517I$	0
$u=-0.02145-1.62935I$ $a=\ 0.039433+0.379694I$ $b=-0.521747+0.073738I$	$10.84750+1.02517I$	0
$u=\ 0.08779+1.62994I$ $a=-0.272775+0.123691I$ $b=\ 0.280139+0.277553I$	$9.99358-4.73908I$	0
$u=\ 0.08779-1.62994I$ $a=-0.272775-0.123691I$ $b=\ 0.280139-0.277553I$	$9.99358+4.73908I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.355126$ $a = 0.787893$ $b = -0.561465$	-0.670068	-14.5670
$u = -0.273544$ $a = -0.903552$ $b = -2.51009$	-2.88449	-51.7460
$u = 0.04621 + 1.72842I$ $a = 0.110542 + 0.138918I$ $b = 0.197044 - 0.248926I$	$8.82291 - 3.58672I$	0
$u = 0.04621 - 1.72842I$ $a = 0.110542 - 0.138918I$ $b = 0.197044 + 0.248926I$	$8.82291 + 3.58672I$	0

II. $\boldsymbol{I_2^u = \langle 2u^4 - 3u^3 + 8u^2 + 3b - 7u + 5,\ 2u^4 - 3u^3 + 8u^2 + 3a - 7u + 5,\ u^5 - u^4 + 4u^3 - 3u^2 + 3u - 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{2}{3}u^4 + u^3 - \frac{8}{3}u^2 + \frac{7}{3}u - \frac{5}{3} \\ -\frac{2}{3}u^4 + u^3 - \frac{8}{3}u^2 + \frac{7}{3}u - \frac{5}{3} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -\frac{2}{3}u^4 + u^3 - \frac{8}{3}u^2 + \frac{7}{3}u - \frac{5}{3} \\ -\frac{2}{3}u^4 + u^3 - \frac{8}{3}u^2 + \frac{7}{3}u - \frac{5}{3} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{2}{3}u^4 + u^3 - \frac{8}{3}u^2 + \frac{4}{3}u - \frac{5}{3} \\ -\frac{2}{3}u^4 + 2u^3 + \cdots + \frac{10}{3}u - \frac{5}{3} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^3 + 2u \\ -u^4 + u^3 - 3u^2 + 2u - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ -u^3 - u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{14}{9}u^4 + \frac{11}{3}u^3 - \frac{77}{9}u^2 + \frac{88}{9}u - \frac{137}{9}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_7, c_8	$y^5 + 7y^4 + 16y^3 + 13y^2 + 3y - 1$
c_2, c_5	$y^5 - y^4 + 4y^3 - 3y^2 + 3y - 1$
c_6, c_{11}	y^5
c_9, c_{10}, c_{12}	$(y-1)^5$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.233677 + 0.885557I$ $a = 0.046507 + 0.815869I$ $b = 0.046507 + 0.815869I$	$0.17487 - 2.21397I$	$-9.22580 + 4.04289I$
$u = 0.233677 - 0.885557I$ $a = 0.046507 - 0.815869I$ $b = 0.046507 - 0.815869I$	$0.17487 + 2.21397I$	$-9.22580 - 4.04289I$
$u = 0.416284$ $a = -1.10533$ $b = -1.10533$	-2.52712	-12.4170
$u = 0.05818 + 1.69128I$ $a = 0.172825 - 0.649395I$ $b = 0.172825 - 0.649395I$	$9.31336 - 3.33174I$	$-4.67696 - 1.07305I$
$u = 0.05818 - 1.69128I$ $a = 0.172825 + 0.649395I$ $b = 0.172825 + 0.649395I$	$9.31336 + 3.33174I$	$-4.67696 + 1.07305I$

III. $\boldsymbol{I^u_3 = \langle -au + 11b - 8a + 4u - 1,\ 2a^2 + au - 2a + 7u + 9,\ u^2 + 2\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u \\ -u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ 0.0909091au + 0.727273a - 0.363636u + 0.0909091 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.181818au + 0.454545a - 0.727273u + 0.181818 \\ 0.272727au + 0.181818a - 1.09091u + 0.272727 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.0909091au + 0.272727a - 1.13636u + 0.909091 \\ -0.181818au + 0.545455a - 0.272727u + 0.818182 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.0909091au - 0.272727a - 0.863636u + 1.09091 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.0909091au - 0.272727a - 0.863636u + 0.0909091 \\ 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.0909091au - 0.272727a - 0.863636u + 1.09091 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -16$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.414210I$ $a = -0.61803 + 2.01815I$ $b = -0.618034 + 0.874032I$	-5.59278	-16.0000
$u = 1.414210I$ $a = 1.61803 - 2.72526I$ $b = 1.61803 - 2.28825I$	2.30291	-16.0000
$u = -1.414210I$ $a = -0.61803 - 2.01815I$ $b = -0.618034 - 0.874032I$	-5.59278	-16.0000
$u = -1.414210I$ $a = 1.61803 + 2.72526I$ $b = 1.61803 + 2.28825I$	2.30291	-16.0000

IV. $I_1^v = \langle a,\ b + v + 2,\ v^2 + 3v + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -0.381966$ $a = 0$ $b = -1.61803$	-2.63189	-6.00000
$v = -2.61803$ $a = 0$ $b = 0.618034$	-10.5276	-6.00000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^6(u^5-u^4+4u^3-3u^2+3u-1)$ $\cdot\,(u^{74}+36u^{73}+\cdots+9145u+361)$
c_2	$((u-1)^2)(u+1)^4(u^5-u^4+\cdots+u-1)(u^{74}+4u^{73}+\cdots+81u+19)$
c_3, c_4	$u^2(u^2+2)^2(u^5-u^4+\cdots+3u-1)(u^{74}-2u^{73}+\cdots+20u-4)$
c_5	$((u-1)^4)(u+1)^2(u^5+u^4+\cdots+u+1)(u^{74}+4u^{73}+\cdots+81u+19)$
c_6	$u^5(u^2-u-1)^2(u^2+u-1)(u^{74}-2u^{73}+\cdots+768u-288)$
c_7, c_8	$u^2(u^2+2)^2(u^5+u^4+\cdots+3u+1)(u^{74}-2u^{73}+\cdots+20u-4)$
c_9, c_{10}	$((u-1)^5)(u^2+u-1)^3(u^{74}-9u^{73}+\cdots+76u+9)$
c_{11}	$u^5(u^2-u-1)(u^2+u-1)^2(u^{74}-2u^{73}+\cdots+768u-288)$
c_{12}	$((u+1)^5)(u^2-u-1)^3(u^{74}-9u^{73}+\cdots+76u+9)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^6(y^5+7y^4+16y^3+13y^2+3y-1)$ $\cdot(y^{74}+12y^{73}+\cdots-14397001y+130321)$
c_2, c_5	$(y-1)^6(y^5-y^4+4y^3-3y^2+3y-1)$ $\cdot(y^{74}-36y^{73}+\cdots-9145y+361)$
c_3, c_4, c_7 c_8	$y^2(y+2)^4(y^5+7y^4+16y^3+13y^2+3y-1)$ $\cdot(y^{74}+86y^{73}+\cdots-144y+16)$
c_6, c_{11}	$y^5(y^2-3y+1)^3(y^{74}-42y^{73}+\cdots-2096640y+82944)$
c_9, c_{10}, c_{12}	$((y-1)^5)(y^2-3y+1)^3(y^{74}-71y^{73}+\cdots+578y+81)$