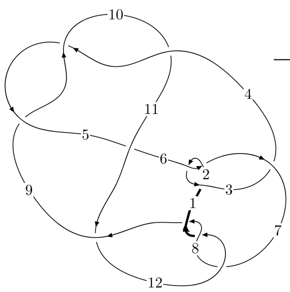
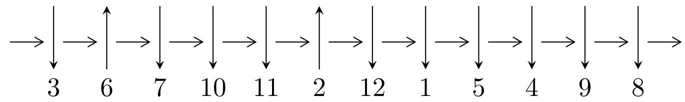
$12a_{0253}$ ($K12a_{0253}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 9.24517 \times 10^{57} u^{85} - 1.54464 \times 10^{58} u^{84} + \cdots + 1.11523 \times 10^{58} b + 1.15745 \times 10^{57},$$
$$1.50534 \times 10^{56} u^{85} + 3.04581 \times 10^{58} u^{84} + \cdots + 3.34570 \times 10^{58} a + 5.43441 \times 10^{59},\ u^{86} - 3u^{85} + \cdots - 34u -$$
$$I_2^u = \langle -2a^3 + a^2 + 3b - 2a + 12,\ a^4 - 2a^3 + a^2 - 6a + 9,\ u + 1\rangle$$
$$I_3^u = \langle b - a - 1,\ a^2 + a + 1,\ u - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 92 representations.

[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. $I_1^u =$
$\langle 9.25\times10^{57}u^{85}-1.54\times10^{58}u^{84}+\cdots+1.12\times10^{58}b+1.16\times10^{57},\ 1.51\times10^{56}u^{85}+3.05\times10^{58}u^{84}+\cdots+3.35\times10^{58}a+5.43\times10^{59},\ u^{86}-3u^{85}+\cdots-34u-3\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_2 = \begin{pmatrix} -0.00449933u^{85}-0.910366u^{84}+\cdots-141.366u-16.2430 \\ -0.828990u^{85}+1.38504u^{84}+\cdots-11.9263u-0.103785 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^2+1 \\ -u^4+2u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.837224u^{85}+0.0804651u^{84}+\cdots-130.221u-7.83724 \\ -3.79661u^{85}+6.58342u^{84}+\cdots-86.4919u-6.76326 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.176785u^{85}-1.53222u^{84}+\cdots-115.444u-7.32994 \\ -3.77989u^{85}+6.61134u^{84}+\cdots-69.8360u-5.51727 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 3.95667u^{85}-8.14357u^{84}+\cdots-45.6076u-1.81266 \\ -3.77989u^{85}+6.61134u^{84}+\cdots-69.8360u-5.51727 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^5-2u^3+u \\ u^7-3u^5+2u^3+u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.170469u^{85}-1.72112u^{84}+\cdots-100.160u-5.09925 \\ -5.50900u^{85}+9.39416u^{84}+\cdots-126.089u-9.76030 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0483546u^{85}+0.0549293u^{84}+\cdots+153.570u+22.9187 \\ -2.19185u^{85}+4.26494u^{84}+\cdots-65.2290u-7.04254 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 10.4324u^{85}-19.4232u^{84}+\cdots+153.225u+9.09895$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{86} + 40u^{85} + \cdots - 49u + 9$
c_2, c_6	$u^{86} - 2u^{85} + \cdots - 5u + 3$
c_3	$u^{86} + 2u^{85} + \cdots + 6103u + 867$
c_4, c_9, c_{10}	$u^{86} - u^{85} + \cdots + 12u^2 - 4$
c_5	$u^{86} + u^{85} + \cdots - 10416u - 3764$
c_7, c_8, c_{12}	$u^{86} + 3u^{85} + \cdots + 34u - 3$
c_{11}	$u^{86} - 15u^{85} + \cdots - 39168u + 2304$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{86} + 16y^{85} + \cdots - 6973y + 81$
c_2, c_6	$y^{86} + 40y^{85} + \cdots - 49y + 9$
c_3	$y^{86} - 8y^{85} + \cdots - 38342497y + 751689$
c_4, c_9, c_{10}	$y^{86} + 81y^{85} + \cdots - 96y + 16$
c_5	$y^{86} + 21y^{85} + \cdots + 479022176y + 14167696$
c_7, c_8, c_{12}	$y^{86} - 73y^{85} + \cdots - 22y + 9$
c_{11}	$y^{86} + 41y^{85} + \cdots - 33914880y + 5308416$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.937490 + 0.430300I$ $a = 1.00429 - 1.14454I$ $b = -0.241775 - 1.011130I$	$1.144470 + 0.306681I$	0
$u = -0.937490 - 0.430300I$ $a = 1.00429 + 1.14454I$ $b = -0.241775 + 1.011130I$	$1.144470 - 0.306681I$	0
$u = 1.005680 + 0.408323I$ $a = -0.191946 + 0.749339I$ $b = 0.532327 + 1.041940I$	$-1.99634 + 3.50206I$	0
$u = 1.005680 - 0.408323I$ $a = -0.191946 - 0.749339I$ $b = 0.532327 - 1.041940I$	$-1.99634 - 3.50206I$	0
$u = -0.164209 + 0.884531I$ $a = 1.55407 - 0.50527I$ $b = -0.596084 - 1.103410I$	$6.24183 + 11.34140I$	0
$u = -0.164209 - 0.884531I$ $a = 1.55407 + 0.50527I$ $b = -0.596084 + 1.103410I$	$6.24183 - 11.34140I$	0
$u = -0.140641 + 0.851038I$ $a = 0.719793 - 0.554229I$ $b = -0.774320 + 0.412576I$	$8.28971 + 6.17177I$	$0. - 3.86741I$
$u = -0.140641 - 0.851038I$ $a = 0.719793 + 0.554229I$ $b = -0.774320 - 0.412576I$	$8.28971 - 6.17177I$	$0. + 3.86741I$
$u = 1.108240 + 0.304185I$ $a = -0.660682 - 0.518695I$ $b = 0.590338 - 0.517278I$	$-0.416671 - 0.977097I$	0
$u = 1.108240 - 0.304185I$ $a = -0.660682 + 0.518695I$ $b = 0.590338 + 0.517278I$	$-0.416671 + 0.977097I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.191772 + 0.814006I$ $a = -1.62696 - 0.60410I$ $b = 0.575207 - 1.088420I$	$0.50319 - 7.91768I$	$-8.00000 + 8.55988I$
$u = 0.191772 - 0.814006I$ $a = -1.62696 + 0.60410I$ $b = 0.575207 + 1.088420I$	$0.50319 + 7.91768I$	$-8.00000 - 8.55988I$
$u = -0.643264 + 0.517594I$ $a = -0.069274 + 0.763693I$ $b = -0.388813 + 1.051620I$	$0.126526 - 1.348510I$	$-10.09845 + 0.59644I$
$u = -0.643264 - 0.517594I$ $a = -0.069274 - 0.763693I$ $b = -0.388813 - 1.051620I$	$0.126526 + 1.348510I$	$-10.09845 - 0.59644I$
$u = 0.679429 + 0.440262I$ $a = -1.07780 - 1.26627I$ $b = 0.378317 - 1.023720I$	$-3.03860 - 2.82315I$	$-15.8960 + 4.7165I$
$u = 0.679429 - 0.440262I$ $a = -1.07780 + 1.26627I$ $b = 0.378317 + 1.023720I$	$-3.03860 + 2.82315I$	$-15.8960 - 4.7165I$
$u = -0.214594 + 0.780092I$ $a = -0.090560 + 0.441568I$ $b = -0.139371 + 1.089850I$	$3.33866 + 4.01408I$	$-7.17137 - 3.50293I$
$u = -0.214594 - 0.780092I$ $a = -0.090560 - 0.441568I$ $b = -0.139371 - 1.089850I$	$3.33866 - 4.01408I$	$-7.17137 + 3.50293I$
$u = -0.515177 + 0.622214I$ $a = 1.33600 - 1.11735I$ $b = -0.447982 - 1.078400I$	$0.52472 + 5.60317I$	$-8.80517 - 7.78208I$
$u = -0.515177 - 0.622214I$ $a = 1.33600 + 1.11735I$ $b = -0.447982 + 1.078400I$	$0.52472 - 5.60317I$	$-8.80517 + 7.78208I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.119280 + 0.428552I$ $a = 0.620787 - 0.453878I$ $b = -0.695633 - 0.422165I$	$5.30202 - 1.57924I$	0
$u = -1.119280 - 0.428552I$ $a = 0.620787 + 0.453878I$ $b = -0.695633 + 0.422165I$	$5.30202 + 1.57924I$	0
$u = -1.105670 + 0.488129I$ $a = 0.196535 + 0.684274I$ $b = -0.570013 + 1.080940I$	$3.37107 - 6.46244I$	0
$u = -1.105670 - 0.488129I$ $a = 0.196535 - 0.684274I$ $b = -0.570013 - 1.080940I$	$3.37107 + 6.46244I$	0
$u = 0.140406 + 0.768282I$ $a = -0.667609 - 0.599757I$ $b = 0.717440 + 0.412450I$	$2.48759 - 2.96564I$	$-4.45963 + 4.32184I$
$u = 0.140406 - 0.768282I$ $a = -0.667609 + 0.599757I$ $b = 0.717440 - 0.412450I$	$2.48759 + 2.96564I$	$-4.45963 - 4.32184I$
$u = -1.202960 + 0.205672I$ $a = 0.342628 + 0.698123I$ $b = -0.626797 + 0.954629I$	$-1.81208 - 0.80751I$	0
$u = -1.202960 - 0.205672I$ $a = 0.342628 - 0.698123I$ $b = -0.626797 - 0.954629I$	$-1.81208 + 0.80751I$	0
$u = -1.224330 + 0.109317I$ $a = 1.69292 - 2.80660I$ $b = 0.304875 - 0.972720I$	$1.75123 - 1.09860I$	0
$u = -1.224330 - 0.109317I$ $a = 1.69292 + 2.80660I$ $b = 0.304875 + 0.972720I$	$1.75123 + 1.09860I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.059355 + 0.763438I$ $a = -0.842674 - 0.752985I$ $b = 0.727407 + 0.546983I$	$9.00597 + 3.45050I$	$0.30379 - 3.33870I$
$u = -0.059355 - 0.763438I$ $a = -0.842674 + 0.752985I$ $b = 0.727407 - 0.546983I$	$9.00597 - 3.45050I$	$0.30379 + 3.33870I$
$u = -1.209790 + 0.313017I$ $a = 0.618892 + 0.832585I$ $b = 0.670549 - 0.456636I$	$5.48833 + 0.44898I$	0
$u = -1.209790 - 0.313017I$ $a = 0.618892 - 0.832585I$ $b = 0.670549 + 0.456636I$	$5.48833 - 0.44898I$	0
$u = 1.276820 + 0.021621I$ $a = -0.460719 - 0.637385I$ $b = 0.678388 - 0.823248I$	$0.65889 - 2.60578I$	0
$u = 1.276820 - 0.021621I$ $a = -0.460719 + 0.637385I$ $b = 0.678388 + 0.823248I$	$0.65889 + 2.60578I$	0
$u = -1.250950 + 0.268546I$ $a = 0.564274 - 0.541799I$ $b = -0.707247 - 0.625782I$	$-0.84391 + 4.29232I$	0
$u = -1.250950 - 0.268546I$ $a = 0.564274 + 0.541799I$ $b = -0.707247 + 0.625782I$	$-0.84391 - 4.29232I$	0
$u = -0.012356 + 0.713233I$ $a = -1.99890 - 0.30381I$ $b = 0.611337 - 1.024340I$	$7.58994 - 1.66047I$	$-1.74027 + 2.14109I$
$u = -0.012356 - 0.713233I$ $a = -1.99890 + 0.30381I$ $b = 0.611337 + 1.024340I$	$7.58994 + 1.66047I$	$-1.74027 - 2.14109I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.140963+0.690414I$ $a=\ \ 1.88863-0.66965I$ $b=-0.567774-1.045600I$	$1.27316+4.01440I$	$-5.59358-2.50795I$
$u=-0.140963-0.690414I$ $a=\ \ 1.88863+0.66965I$ $b=-0.567774+1.045600I$	$1.27316-4.01440I$	$-5.59358+2.50795I$
$u=-1.268500+0.283353I$ $a=-1.85901+2.51368I$ $b=\ \ 0.564722+1.064450I$	$3.69862+5.25403I$	0
$u=-1.268500-0.283353I$ $a=-1.85901-2.51368I$ $b=\ \ 0.564722-1.064450I$	$3.69862-5.25403I$	0
$u=\ \ 0.285903+0.636287I$ $a=\ \ 0.203378+0.466290I$ $b=\ \ 0.211263+1.020930I$	$-1.89412-1.00150I$	$-12.28501+3.83404I$
$u=\ \ 0.285903-0.636287I$ $a=\ \ 0.203378-0.466290I$ $b=\ \ 0.211263-1.020930I$	$-1.89412+1.00150I$	$-12.28501-3.83404I$
$u=-0.032720+0.696278I$ $a=\ \ 0.678188-0.750281I$ $b=-0.672048+0.493933I$	$2.90283-0.80168I$	$-2.77950+3.30570I$
$u=-0.032720-0.696278I$ $a=\ \ 0.678188+0.750281I$ $b=-0.672048-0.493933I$	$2.90283+0.80168I$	$-2.77950-3.30570I$
$u=\ \ 1.281200+0.292712I$ $a=-0.307225+0.653899I$ $b=\ \ 0.662193+1.001970I$	$3.56173-1.97670I$	0
$u=\ \ 1.281200-0.292712I$ $a=-0.307225-0.653899I$ $b=\ \ 0.662193-1.001970I$	$3.56173+1.97670I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.475283 + 0.484878I$ $a = 0.510538 - 0.361911I$ $b = -0.542318 + 0.119668I$	$3.06367 + 1.77620I$	$-4.34056 - 4.01240I$
$u = -0.475283 - 0.484878I$ $a = 0.510538 + 0.361911I$ $b = -0.542318 - 0.119668I$	$3.06367 - 1.77620I$	$-4.34056 + 4.01240I$
$u = 1.299880 + 0.276010I$ $a = -0.542867 + 0.559023I$ $b = -0.717220 - 0.354248I$	$-1.25881 - 2.70593I$	0
$u = 1.299880 - 0.276010I$ $a = -0.542867 - 0.559023I$ $b = -0.717220 + 0.354248I$	$-1.25881 + 2.70593I$	0
$u = 1.304220 + 0.324168I$ $a = -0.546651 - 0.509287I$ $b = 0.770756 - 0.604539I$	$4.74301 - 7.37621I$	0
$u = 1.304220 - 0.324168I$ $a = -0.546651 + 0.509287I$ $b = 0.770756 + 0.604539I$	$4.74301 + 7.37621I$	0
$u = 1.352410 + 0.174405I$ $a = -0.81324 - 2.16272I$ $b = -0.249471 - 1.099780I$	$-5.55408 - 0.16925I$	0
$u = 1.352410 - 0.174405I$ $a = -0.81324 + 2.16272I$ $b = -0.249471 + 1.099780I$	$-5.55408 + 0.16925I$	0
$u = 1.352140 + 0.292186I$ $a = 1.43499 + 2.27569I$ $b = -0.563322 + 1.107880I$	$-3.45130 - 7.60457I$	0
$u = 1.352140 - 0.292186I$ $a = 1.43499 - 2.27569I$ $b = -0.563322 - 1.107880I$	$-3.45130 + 7.60457I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.38831$ $a=\ 0.567618$ $b=\ 0.720202$	-6.55086	0
$u=-1.351850+0.324366I$ $a=\ 0.391496+0.542908I$ $b=\ 0.791439-0.364830I$	$-2.21861+6.91647I$	0
$u=-1.351850-0.324366I$ $a=\ 0.391496-0.542908I$ $b=\ 0.791439+0.364830I$	$-2.21861-6.91647I$	0
$u=\ 1.393980+0.099240I$ $a=-0.540745+0.161854I$ $b=-0.738441-0.118627I$	$-2.87844-3.59222I$	0
$u=\ 1.393980-0.099240I$ $a=-0.540745-0.161854I$ $b=-0.738441+0.118627I$	$-2.87844+3.59222I$	0
$u=-1.381300+0.261910I$ $a=\ 0.76597-1.83243I$ $b=\ 0.185250-1.144530I$	$-7.11430+4.28554I$	0
$u=-1.381300-0.261910I$ $a=\ 0.76597+1.83243I$ $b=\ 0.185250+1.144530I$	$-7.11430-4.28554I$	0
$u=\ 1.361770+0.368227I$ $a=-0.313580+0.571371I$ $b=-0.822713-0.393707I$	$3.55461-10.55500I$	0
$u=\ 1.361770-0.368227I$ $a=-0.313580-0.571371I$ $b=-0.822713+0.393707I$	$3.55461+10.55500I$	0
$u=\ 1.38140+0.32368I$ $a=-0.76839-1.67329I$ $b=-0.139012-1.165260I$	$-1.70286-8.00114I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.38140 - 0.32368I$ $a = -0.76839 + 1.67329I$ $b = -0.139012 + 1.165260I$	$-1.70286 + 8.00114I$	0
$u = -1.38065 + 0.34200I$ $a = -1.41854 + 2.02252I$ $b = 0.587418 + 1.124720I$	$-4.46950 + 12.08680I$	0
$u = -1.38065 - 0.34200I$ $a = -1.41854 - 2.02252I$ $b = 0.587418 - 1.124720I$	$-4.46950 - 12.08680I$	0
$u = 1.43042 + 0.03954I$ $a = -0.16221 - 2.40323I$ $b = -0.360833 - 1.146350I$	$-6.62289 + 0.05087I$	0
$u = 1.43042 - 0.03954I$ $a = -0.16221 + 2.40323I$ $b = -0.360833 + 1.146350I$	$-6.62289 - 0.05087I$	0
$u = 1.38019 + 0.38195I$ $a = 1.47204 + 1.87953I$ $b = -0.607318 + 1.125960I$	$1.3661 - 15.8872I$	0
$u = 1.38019 - 0.38195I$ $a = 1.47204 - 1.87953I$ $b = -0.607318 - 1.125960I$	$1.3661 + 15.8872I$	0
$u = -1.44057 + 0.05057I$ $a = -0.23575 + 2.46811I$ $b = 0.421098 + 1.150570I$	$-9.88134 + 4.04361I$	0
$u = -1.44057 - 0.05057I$ $a = -0.23575 - 2.46811I$ $b = 0.421098 - 1.150570I$	$-9.88134 - 4.04361I$	0
$u = 1.44058 + 0.13086I$ $a = 0.59079 + 2.42841I$ $b = -0.470411 + 1.150770I$	$-5.89285 - 8.01676I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.44058 - 0.13086I$ $a = 0.59079 - 2.42841I$ $b = -0.470411 - 1.150770I$	$-5.89285 + 8.01676I$	0
$u = 0.455616$ $a = -0.438747$ $b = 0.323601$	-0.724667	-13.5020
$u = -0.299519 + 0.225484I$ $a = -1.06879 + 1.18717I$ $b = -0.385808 + 0.901420I$	$-0.52400 - 1.62426I$	$-4.72668 + 3.34789I$
$u = -0.299519 - 0.225484I$ $a = -1.06879 - 1.18717I$ $b = -0.385808 - 0.901420I$	$-0.52400 + 1.62426I$	$-4.72668 - 3.34789I$
$u = -0.128640 + 0.138655I$ $a = -0.21986 - 5.36593I$ $b = 0.522501 + 0.812392I$	$4.95984 + 2.14799I$	$0.37118 - 3.75545I$
$u = -0.128640 - 0.138655I$ $a = -0.21986 + 5.36593I$ $b = 0.522501 - 0.812392I$	$4.95984 - 2.14799I$	$0.37118 + 3.75545I$

II. $I_2^u = \langle -2a^3 + a^2 + 3b - 2a + 12,\ a^4 - 2a^3 + a^2 - 6a + 9,\ u + 1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} a \\ \frac{2}{3}a^3 - \frac{1}{3}a^2 + \frac{2}{3}a - 4 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} a^3 - 5 \\ -\frac{2}{3}a^3 + \frac{1}{3}a^2 - \frac{2}{3}a + 3 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -\frac{1}{3}a^3 - \frac{1}{3}a^2 + \frac{2}{3}a + 2 \\ \frac{2}{3}a^3 - \frac{1}{3}a^2 + \frac{2}{3}a - 3 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -a^3 + 5 \\ \frac{2}{3}a^3 - \frac{1}{3}a^2 + \frac{2}{3}a - 3 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} a^3 - 5 \\ -\frac{5}{3}a^3 + \frac{1}{3}a^2 - \frac{2}{3}a + 8 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2 \\ \frac{2}{3}a^3 - \frac{1}{3}a^2 - \frac{1}{3}a - 4 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{8}{3}a^3 - \frac{4}{3}a^2 + \frac{8}{3}a - 20$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = 1.72474 + 0.15892I$ $b = -0.500000 + 0.866025I$	$3.28987 - 2.02988I$	$-6.00000 + 3.46410I$
$u = -1.00000$ $a = 1.72474 - 0.15892I$ $b = -0.500000 - 0.866025I$	$3.28987 + 2.02988I$	$-6.00000 - 3.46410I$
$u = -1.00000$ $a = -0.72474 + 1.57313I$ $b = -0.500000 + 0.866025I$	$3.28987 - 2.02988I$	$-6.00000 + 3.46410I$
$u = -1.00000$ $a = -0.72474 - 1.57313I$ $b = -0.500000 - 0.866025I$	$3.28987 + 2.02988I$	$-6.00000 - 3.46410I$

III. $I_3^u = \langle b - a - 1,\ a^2 + a + 1,\ u - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4a - 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.500000 + 0.866025I$ $b = 0.500000 + 0.866025I$	$-1.64493 + 2.02988I$	$-12.00000 - 3.46410I$
$u = 1.00000$ $a = -0.500000 - 0.866025I$ $b = 0.500000 - 0.866025I$	$-1.64493 - 2.02988I$	$-12.00000 + 3.46410I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^3)(u^{86}+40u^{85}+\cdots-49u+9)$
c_2	$((u^2-u+1)^2)(u^2+u+1)(u^{86}-2u^{85}+\cdots-5u+3)$
c_3	$(u^2-u+1)(u^2+u+1)^2(u^{86}+2u^{85}+\cdots+6103u+867)$
c_4, c_9, c_{10}	$u^2(u^2+2)^2(u^{86}-u^{85}+\cdots+12u^2-4)$
c_5	$u^2(u^2+2)^2(u^{86}+u^{85}+\cdots-10416u-3764)$
c_6	$(u^2-u+1)(u^2+u+1)^2(u^{86}-2u^{85}+\cdots-5u+3)$
c_7, c_8	$((u-1)^2)(u+1)^4(u^{86}+3u^{85}+\cdots+34u-3)$
c_{11}	$u^6(u^{86}-15u^{85}+\cdots-39168u+2304)$
c_{12}	$((u-1)^4)(u+1)^2(u^{86}+3u^{85}+\cdots+34u-3)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^3)(y^{86}+16y^{85}+\cdots-6973y+81)$
c_2, c_6	$((y^2+y+1)^3)(y^{86}+40y^{85}+\cdots-49y+9)$
c_3	$((y^2+y+1)^3)(y^{86}-8y^{85}+\cdots-3.83425\times10^7y+751689)$
c_4, c_9, c_{10}	$y^2(y+2)^4(y^{86}+81y^{85}+\cdots-96y+16)$
c_5	$y^2(y+2)^4(y^{86}+21y^{85}+\cdots+4.79022\times10^8y+1.41677\times10^7)$
c_7, c_8, c_{12}	$((y-1)^6)(y^{86}-73y^{85}+\cdots-22y+9)$
c_{11}	$y^6(y^{86}+41y^{85}+\cdots-3.39149\times10^7y+5308416)$