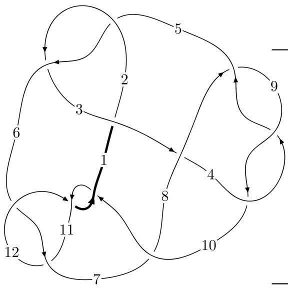
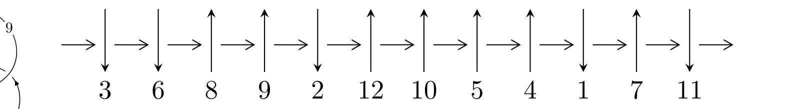
$12a_{0279}$ ($K12a_{0279}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.21213 \times 10^{48} u^{89} - 4.02565 \times 10^{48} u^{88} + \cdots + 4.69496 \times 10^{48} b - 7.32492 \times 10^{48},$$
$$1.52568 \times 10^{48} u^{89} - 3.14305 \times 10^{48} u^{88} + \cdots + 4.69496 \times 10^{48} a + 3.64549 \times 10^{48},\ u^{90} + u^{89} + \cdots - 8u + 4\rangle$$
$$I_2^u = \langle b - 2a - 1,\ 2a^2 + au + 4a + u + 1,\ u^2 + 2\rangle$$

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

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 96 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.

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$\boldsymbol{I_1^u = \langle -1.21\times 10^{48}u^{89} - 4.03\times 10^{48}u^{88} + \cdots + 4.69\times 10^{48}b - 7.32\times 10^{48},\ 1.53\times 10^{48}u^{89} - 3.14\times 10^{48}u^{88} + \cdots + 4.69\times 10^{48}a + 3.65\times 10^{48},\ u^{90} + u^{89} + \cdots - 8u + 4\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.324961u^{89} + 0.669451u^{88} + \cdots - 2.00627u - 0.776469 \\ 0.258177u^{89} + 0.857440u^{88} + \cdots - 3.95149u + 1.56017 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -0.0541425u^{89} - 1.58665u^{88} + \cdots + 14.2281u - 6.14640 \\ 0.819260u^{89} - 1.18304u^{88} + \cdots + 8.11565u - 3.84392 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^4 - u^2 + 1 \\ u^6 + 2u^4 + u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.342702u^{89} + 0.132880u^{88} + \cdots + 2.50106u - 3.05984 \\ 0.245541u^{89} + 0.307126u^{88} + \cdots - 3.58009u + 1.32787 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^5 - 2u^3 - u \\ -u^5 - u^3 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.121690u^{89} - 1.29232u^{88} + \cdots + 10.9200u - 5.18322 \\ 0.514237u^{89} - 1.25759u^{88} + \cdots + 6.90051u - 3.39690 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.645491u^{89} - 0.0589180u^{88} + \cdots + 0.373830u + 2.57549 \\ 1.13689u^{89} + 0.882237u^{88} + \cdots + 3.67121u - 0.618462 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.39908u^{89} - 4.87459u^{88} + \cdots - 1.48366u + 5.99189$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{90} + 49u^{89} + \cdots + 64u + 9$
c_2, c_5	$u^{90} + 3u^{89} + \cdots + 8u + 3$
c_3	$u^{90} + u^{89} + \cdots + 25496u + 8452$
c_4, c_8, c_9	$u^{90} - u^{89} + \cdots + 8u + 4$
c_6, c_{11}	$u^{90} - 2u^{89} + \cdots + 5u + 3$
c_7	$u^{90} + 15u^{89} + \cdots + 14592u + 2304$
c_{10}, c_{12}	$u^{90} + 32u^{89} + \cdots + 101u + 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{90} - 9y^{89} + \cdots - 1180y + 81$
c_2, c_5	$y^{90} - 49y^{89} + \cdots - 64y + 9$
c_3	$y^{90} + 25y^{89} + \cdots + 1049955456y + 71436304$
c_4, c_8, c_9	$y^{90} + 85y^{89} + \cdots - 192y + 16$
c_6, c_{11}	$y^{90} + 32y^{89} + \cdots + 101y + 9$
c_7	$y^{90} + 49y^{89} + \cdots + 40402944y + 5308416$
c_{10}, c_{12}	$y^{90} + 56y^{89} + \cdots + 1517y + 81$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.249552 + 1.084800I$ $a = -0.924355 + 0.774803I$ $b = 0.198066 + 0.911560I$	$2.16967 - 1.69067I$	0
$u = 0.249552 - 1.084800I$ $a = -0.924355 - 0.774803I$ $b = 0.198066 - 0.911560I$	$2.16967 + 1.69067I$	0
$u = -0.568513 + 0.621394I$ $a = 1.30855 - 0.85772I$ $b = -0.363076 - 0.238702I$	$-1.48585 + 8.08974I$	$0. - 5.15061I$
$u = -0.568513 - 0.621394I$ $a = 1.30855 + 0.85772I$ $b = -0.363076 + 0.238702I$	$-1.48585 - 8.08974I$	$0. + 5.15061I$
$u = -0.738744 + 0.379283I$ $a = 0.748547 + 0.652206I$ $b = 0.90937 - 1.22327I$	$-0.63451 - 12.52790I$	$1.19702 + 10.10489I$
$u = -0.738744 - 0.379283I$ $a = 0.748547 - 0.652206I$ $b = 0.90937 + 1.22327I$	$-0.63451 + 12.52790I$	$1.19702 - 10.10489I$
$u = -0.262408 + 1.154250I$ $a = -1.108300 - 0.437411I$ $b = -0.065136 - 0.883635I$	$2.00112 - 3.95850I$	0
$u = -0.262408 - 1.154250I$ $a = -1.108300 + 0.437411I$ $b = -0.065136 + 0.883635I$	$2.00112 + 3.95850I$	0
$u = 0.519114 + 0.626640I$ $a = 0.995537 + 0.900909I$ $b = -0.058580 + 0.291151I$	$-0.36877 - 2.59359I$	$1.68494 + 0.36252I$
$u = 0.519114 - 0.626640I$ $a = 0.995537 - 0.900909I$ $b = -0.058580 - 0.291151I$	$-0.36877 + 2.59359I$	$1.68494 - 0.36252I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.096832 + 1.186310I$ $a = -0.033306 + 1.034330I$ $b = 0.058839 + 1.333360I$	$-1.98840 - 2.05606I$	0
$u = -0.096832 - 1.186310I$ $a = -0.033306 - 1.034330I$ $b = 0.058839 - 1.333360I$	$-1.98840 + 2.05606I$	0
$u = 0.727913 + 0.354357I$ $a = 0.684717 - 0.364269I$ $b = 0.934993 + 0.899990I$	$0.61238 + 6.86563I$	$3.32287 - 5.58195I$
$u = 0.727913 - 0.354357I$ $a = 0.684717 + 0.364269I$ $b = 0.934993 - 0.899990I$	$0.61238 - 6.86563I$	$3.32287 + 5.58195I$
$u = 0.704616 + 0.318801I$ $a = -0.594174 + 0.627580I$ $b = -0.71343 - 1.29610I$	$2.12059 + 7.40432I$	$4.77244 - 6.86130I$
$u = 0.704616 - 0.318801I$ $a = -0.594174 - 0.627580I$ $b = -0.71343 + 1.29610I$	$2.12059 - 7.40432I$	$4.77244 + 6.86130I$
$u = -0.662386 + 0.390781I$ $a = 1.46629 + 0.17474I$ $b = 0.227985 - 0.829505I$	$-5.62709 - 6.13908I$	$-3.82787 + 6.97428I$
$u = -0.662386 - 0.390781I$ $a = 1.46629 - 0.17474I$ $b = 0.227985 + 0.829505I$	$-5.62709 + 6.13908I$	$-3.82787 - 6.97428I$
$u = 0.033830 + 1.232490I$ $a = 2.87009 + 0.36125I$ $b = 1.95889 + 0.10621I$	$-4.18113 + 2.57306I$	0
$u = 0.033830 - 1.232490I$ $a = 2.87009 - 0.36125I$ $b = 1.95889 - 0.10621I$	$-4.18113 - 2.57306I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.302111 + 0.688104I$ $a = -1.182470 + 0.745000I$ $b = 0.0584853 + 0.1015010I$	$1.62034 - 1.81508I$	$4.15715 + 4.60801I$
$u = -0.302111 - 0.688104I$ $a = -1.182470 - 0.745000I$ $b = 0.0584853 - 0.1015010I$	$1.62034 + 1.81508I$	$4.15715 - 4.60801I$
$u = -0.559639 + 0.498551I$ $a = 1.040250 - 0.158770I$ $b = -0.161974 - 1.057690I$	$-6.07136 + 2.10121I$	$-5.43931 - 0.33251I$
$u = -0.559639 - 0.498551I$ $a = 1.040250 + 0.158770I$ $b = -0.161974 + 1.057690I$	$-6.07136 - 2.10121I$	$-5.43931 + 0.33251I$
$u = 0.417371 + 0.622025I$ $a = -1.50102 - 0.47657I$ $b = 0.274564 - 0.052875I$	$0.95853 - 3.45680I$	$2.88557 + 1.23651I$
$u = 0.417371 - 0.622025I$ $a = -1.50102 + 0.47657I$ $b = 0.274564 + 0.052875I$	$0.95853 + 3.45680I$	$2.88557 - 1.23651I$
$u = -0.285589 + 1.221790I$ $a = 0.486068 + 1.304470I$ $b = -0.45701 + 1.52445I$	$1.54230 - 3.38846I$	0
$u = -0.285589 - 1.221790I$ $a = 0.486068 - 1.304470I$ $b = -0.45701 - 1.52445I$	$1.54230 + 3.38846I$	0
$u = -0.688837 + 0.276035I$ $a = -0.506158 - 0.412144I$ $b = -0.854238 + 0.944647I$	$3.12192 - 1.86091I$	$7.00300 + 1.72099I$
$u = -0.688837 - 0.276035I$ $a = -0.506158 + 0.412144I$ $b = -0.854238 - 0.944647I$	$3.12192 + 1.86091I$	$7.00300 - 1.72099I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.734669 + 0.080132I$ $a = -0.109774 + 0.752695I$ $b = 0.023197 - 1.081640I$	$5.21426 + 5.38493I$	$7.39429 - 6.48796I$
$u = 0.734669 - 0.080132I$ $a = -0.109774 - 0.752695I$ $b = 0.023197 + 1.081640I$	$5.21426 - 5.38493I$	$7.39429 + 6.48796I$
$u = -0.728864 + 0.033649I$ $a = -0.115841 - 0.702183I$ $b = -0.356277 + 1.021340I$	$5.40415 + 0.30307I$	$8.16735 + 0.42217I$
$u = -0.728864 - 0.033649I$ $a = -0.115841 + 0.702183I$ $b = -0.356277 - 1.021340I$	$5.40415 - 0.30307I$	$8.16735 - 0.42217I$
$u = 0.017786 + 1.274390I$ $a = 0.413923 - 0.857403I$ $b = 1.07386 - 1.49736I$	$-4.55744 - 1.40153I$	0
$u = 0.017786 - 1.274390I$ $a = 0.413923 + 0.857403I$ $b = 1.07386 + 1.49736I$	$-4.55744 + 1.40153I$	0
$u = 0.143394 + 1.287310I$ $a = -0.112381 - 1.079760I$ $b = -0.48289 - 1.86659I$	$-5.23372 + 4.97287I$	0
$u = 0.143394 - 1.287310I$ $a = -0.112381 + 1.079760I$ $b = -0.48289 + 1.86659I$	$-5.23372 - 4.97287I$	0
$u = 0.296460 + 1.261120I$ $a = 0.734857 - 1.082500I$ $b = -0.25481 - 1.57882I$	$1.05884 + 9.12126I$	0
$u = 0.296460 - 1.261120I$ $a = 0.734857 + 1.082500I$ $b = -0.25481 + 1.57882I$	$1.05884 - 9.12126I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.621270 + 0.307573I$ $a = 1.061940 + 0.678358I$ $b = 0.319832 + 0.256604I$	$-0.83928 + 4.15309I$	$3.22592 - 6.96871I$
$u = 0.621270 - 0.307573I$ $a = 1.061940 - 0.678358I$ $b = 0.319832 - 0.256604I$	$-0.83928 - 4.15309I$	$3.22592 + 6.96871I$
$u = 0.567253 + 0.383310I$ $a = -1.116020 + 0.261961I$ $b = 0.028335 - 0.725819I$	$-2.58630 + 1.78860I$	$-0.88529 - 3.97131I$
$u = 0.567253 - 0.383310I$ $a = -1.116020 - 0.261961I$ $b = 0.028335 + 0.725819I$	$-2.58630 - 1.78860I$	$-0.88529 + 3.97131I$
$u = -0.572421 + 0.342007I$ $a = 0.541223 + 0.369016I$ $b = 0.75665 - 1.69733I$	$-2.53779 - 3.86488I$	$-0.38418 + 6.24317I$
$u = -0.572421 - 0.342007I$ $a = 0.541223 - 0.369016I$ $b = 0.75665 + 1.69733I$	$-2.53779 + 3.86488I$	$-0.38418 - 6.24317I$
$u = -0.543916 + 0.354697I$ $a = 1.90366 - 1.12968I$ $b = -0.024846 - 0.225999I$	$-2.64298 + 0.52206I$	$-0.94527 + 2.58356I$
$u = -0.543916 - 0.354697I$ $a = 1.90366 + 1.12968I$ $b = -0.024846 + 0.225999I$	$-2.64298 - 0.52206I$	$-0.94527 - 2.58356I$
$u = -0.183085 + 1.378170I$ $a = 0.237488 + 1.059600I$ $b = 0.587711 + 1.225330I$	$-3.76130 - 2.80716I$	0
$u = -0.183085 - 1.378170I$ $a = 0.237488 - 1.059600I$ $b = 0.587711 - 1.225330I$	$-3.76130 + 2.80716I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.07605 + 1.41611I$ $a = 0.762154 + 0.634266I$ $b = 0.705448 + 0.428340I$	$-7.30151 + 0.27459I$	0
$u = 0.07605 - 1.41611I$ $a = 0.762154 - 0.634266I$ $b = 0.705448 - 0.428340I$	$-7.30151 - 0.27459I$	0
$u = 0.20024 + 1.41544I$ $a = 0.14556 + 2.59827I$ $b = 0.73592 + 2.79536I$	$-6.99603 + 1.49071I$	0
$u = 0.20024 - 1.41544I$ $a = 0.14556 - 2.59827I$ $b = 0.73592 - 2.79536I$	$-6.99603 - 1.49071I$	0
$u = 0.13079 + 1.42986I$ $a = 1.011740 - 0.821862I$ $b = 1.85147 - 1.21489I$	$-5.43906 - 1.71948I$	0
$u = 0.13079 - 1.42986I$ $a = 1.011740 + 0.821862I$ $b = 1.85147 + 1.21489I$	$-5.43906 + 1.71948I$	0
$u = -0.26501 + 1.41163I$ $a = -0.26366 + 2.21891I$ $b = -0.92081 + 2.51508I$	$-2.27071 - 5.32530I$	0
$u = -0.26501 - 1.41163I$ $a = -0.26366 - 2.21891I$ $b = -0.92081 - 2.51508I$	$-2.27071 + 5.32530I$	0
$u = 0.23928 + 1.42161I$ $a = -0.399489 + 1.246210I$ $b = -0.85015 + 1.46895I$	$-6.38310 + 7.30916I$	0
$u = 0.23928 - 1.42161I$ $a = -0.399489 - 1.246210I$ $b = -0.85015 - 1.46895I$	$-6.38310 - 7.30916I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.21404+1.43002I$ $a=-1.09694-1.14316I$ $b=-2.03628-1.56218I$	$-8.35807-2.30611I$	0
$u=-0.21404-1.43002I$ $a=-1.09694+1.14316I$ $b=-2.03628+1.56218I$	$-8.35807+2.30611I$	0
$u=-0.22373+1.42909I$ $a=-0.24193-3.07557I$ $b=0.61653-3.63118I$	$-8.21464-6.81864I$	0
$u=-0.22373-1.42909I$ $a=-0.24193+3.07557I$ $b=0.61653+3.63118I$	$-8.21464+6.81864I$	0
$u=0.21733+1.43797I$ $a=0.61351-1.92799I$ $b=0.61832-2.74986I$	$-8.41519+4.68873I$	0
$u=0.21733-1.43797I$ $a=0.61351+1.92799I$ $b=0.61832+2.74986I$	$-8.41519-4.68873I$	0
$u=0.27151+1.43086I$ $a=-0.12555-2.56714I$ $b=-1.01892-3.14486I$	$-3.48348+10.95720I$	0
$u=0.27151-1.43086I$ $a=-0.12555+2.56714I$ $b=-1.01892+3.14486I$	$-3.48348-10.95720I$	0
$u=0.465562+0.275834I$ $a=0.243457-0.134771I$ $b=1.11439+1.01681I$	$-1.51017-1.07614I$	$1.98895-2.17758I$
$u=0.465562-0.275834I$ $a=0.243457+0.134771I$ $b=1.11439-1.01681I$	$-1.51017+1.07614I$	$1.98895+2.17758I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.524772 + 0.121904I$ $a = -0.819856 + 0.283386I$ $b = -0.358442 + 0.076918I$	$1.068300 - 0.310599I$	$9.28567 + 1.52761I$
$u = -0.524772 - 0.121904I$ $a = -0.819856 - 0.283386I$ $b = -0.358442 - 0.076918I$	$1.068300 + 0.310599I$	$9.28567 - 1.52761I$
$u = 0.27891 + 1.44816I$ $a = 0.47047 + 2.25310I$ $b = 1.08998 + 2.60186I$	$-5.17217 + 10.53120I$	0
$u = 0.27891 - 1.44816I$ $a = 0.47047 - 2.25310I$ $b = 1.08998 - 2.60186I$	$-5.17217 - 10.53120I$	0
$u = -0.24865 + 1.45425I$ $a = -0.47436 - 2.20620I$ $b = -0.50744 - 3.09141I$	$-11.5596 - 9.4710I$	0
$u = -0.24865 - 1.45425I$ $a = -0.47436 + 2.20620I$ $b = -0.50744 + 3.09141I$	$-11.5596 + 9.4710I$	0
$u = 0.00071 + 1.48100I$ $a = 0.951292 - 0.124874I$ $b = 1.63370 - 0.35173I$	$-5.16458 - 2.36926I$	0
$u = 0.00071 - 1.48100I$ $a = 0.951292 + 0.124874I$ $b = 1.63370 + 0.35173I$	$-5.16458 + 2.36926I$	0
$u = -0.19182 + 1.47187I$ $a = -1.03740 - 2.05339I$ $b = -1.12384 - 2.83007I$	$-12.41680 - 0.62429I$	0
$u = -0.19182 - 1.47187I$ $a = -1.03740 + 2.05339I$ $b = -1.12384 + 2.83007I$	$-12.41680 + 0.62429I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.28097 + 1.46057I$ $a = 0.47100 - 2.64901I$ $b = 1.36018 - 3.25151I$	$-6.5496 - 16.2427I$	0
$u = -0.28097 - 1.46057I$ $a = 0.47100 + 2.64901I$ $b = 1.36018 + 3.25151I$	$-6.5496 + 16.2427I$	0
$u = 0.296147 + 0.411712I$ $a = 0.160974 + 0.241335I$ $b = 0.641515 + 0.525167I$	$-1.64633 - 0.98026I$	$-1.55717 - 0.73161I$
$u = 0.296147 - 0.411712I$ $a = 0.160974 - 0.241335I$ $b = 0.641515 - 0.525167I$	$-1.64633 + 0.98026I$	$-1.55717 + 0.73161I$
$u = 0.13717 + 1.48921I$ $a = -0.748243 + 0.772439I$ $b = -1.29711 + 0.80485I$	$-7.22968 - 0.37107I$	0
$u = 0.13717 - 1.48921I$ $a = -0.748243 - 0.772439I$ $b = -1.29711 - 0.80485I$	$-7.22968 + 0.37107I$	0
$u = -0.15630 + 1.50911I$ $a = -1.38321 - 0.82818I$ $b = -2.29005 - 1.13736I$	$-8.45219 + 5.57122I$	0
$u = -0.15630 - 1.50911I$ $a = -1.38321 + 0.82818I$ $b = -2.29005 + 1.13736I$	$-8.45219 - 5.57122I$	0
$u = 0.451714 + 0.073123I$ $a = -1.42887 + 1.70325I$ $b = -0.0829225 - 0.0834728I$	$-1.05321 + 2.73929I$	$4.57325 - 7.80754I$
$u = 0.451714 - 0.073123I$ $a = -1.42887 - 1.70325I$ $b = -0.0829225 + 0.0834728I$	$-1.05321 - 2.73929I$	$4.57325 + 7.80754I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4au + 4u - 8$

(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_8 c_9	$(u^2+2)^2$
c_6, c_{10}	$(u^2-u+1)^2$
c_7	u^4
c_{11}, c_{12}	$(u^2+u+1)^2$

(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_8 c_9	$(y+2)^4$
c_6, c_{10}, c_{11} c_{12}	$(y^2+y+1)^2$
c_7	y^4

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.414210I$ $a = -0.387628 - 0.353553I$ $b = 0.224745 - 0.707107I$	$-6.57974 - 2.02988I$	$-6.00000 + 3.46410I$
$u = 1.414210I$ $a = -1.61237 - 0.35355I$ $b = -2.22474 - 0.70711I$	$-6.57974 + 2.02988I$	$-6.00000 - 3.46410I$
$u = -1.414210I$ $a = -0.387628 + 0.353553I$ $b = 0.224745 + 0.707107I$	$-6.57974 + 2.02988I$	$-6.00000 - 3.46410I$
$u = -1.414210I$ $a = -1.61237 + 0.35355I$ $b = -2.22474 + 0.70711I$	$-6.57974 - 2.02988I$	$-6.00000 + 3.46410I$

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

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

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

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

$$a_8 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} v+1 \\ v \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4v - 2$

(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, c_9	u^2
c_5	$(u+1)^2$
c_6, c_{12}	u^2+u+1
c_{10}, c_{11}	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, c_9	y^2
c_6, c_{10}, c_{11} c_{12}	y^2+y+1

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -0.500000 + 0.866025I$ $a = 0$ $b = -1.00000$	$-1.64493 + 2.02988I$	$0. - 3.46410I$
$v = -0.500000 - 0.866025I$ $a = 0$ $b = -1.00000$	$-1.64493 - 2.02988I$	$0. + 3.46410I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^6)(u^{90}+49u^{89}+\cdots+64u+9)$
c_2	$((u-1)^2)(u+1)^4(u^{90}+3u^{89}+\cdots+8u+3)$
c_3	$u^2(u^2+2)^2(u^{90}+u^{89}+\cdots+25496u+8452)$
c_4, c_8, c_9	$u^2(u^2+2)^2(u^{90}-u^{89}+\cdots+8u+4)$
c_5	$((u-1)^4)(u+1)^2(u^{90}+3u^{89}+\cdots+8u+3)$
c_6	$((u^2-u+1)^2)(u^2+u+1)(u^{90}-2u^{89}+\cdots+5u+3)$
c_7	$u^6(u^{90}+15u^{89}+\cdots+14592u+2304)$
c_{10}	$((u^2-u+1)^3)(u^{90}+32u^{89}+\cdots+101u+9)$
c_{11}	$(u^2-u+1)(u^2+u+1)^2(u^{90}-2u^{89}+\cdots+5u+3)$
c_{12}	$((u^2+u+1)^3)(u^{90}+32u^{89}+\cdots+101u+9)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^6)(y^{90} - 9y^{89} + \cdots - 1180y + 81)$
c_2, c_5	$((y-1)^6)(y^{90} - 49y^{89} + \cdots - 64y + 9)$
c_3	$y^2(y+2)^4(y^{90} + 25y^{89} + \cdots + 1.04996 \times 10^9 y + 7.14363 \times 10^7)$
c_4, c_8, c_9	$y^2(y+2)^4(y^{90} + 85y^{89} + \cdots - 192y + 16)$
c_6, c_{11}	$((y^2+y+1)^3)(y^{90} + 32y^{89} + \cdots + 101y + 9)$
c_7	$y^6(y^{90} + 49y^{89} + \cdots + 4.04029 \times 10^7 y + 5308416)$
c_{10}, c_{12}	$((y^2+y+1)^3)(y^{90} + 56y^{89} + \cdots + 1517y + 81)$