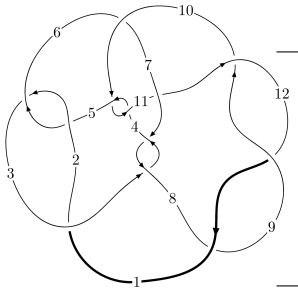
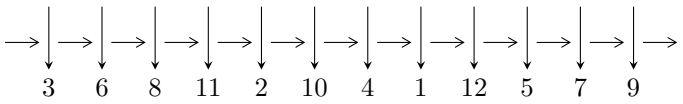
$12a_{0320}$ $(K12a_{0320})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 5.21278 \times 10^{257} u^{106} + 1.97423 \times 10^{258} u^{105} + \cdots + 2.30315 \times 10^{258} b - 7.00904 \times 10^{259}, \\ & 3.57975 \times 10^{259} u^{106} + 1.24332 \times 10^{260} u^{105} + \cdots + 1.68130 \times 10^{260} a - 2.52211 \times 10^{261}, \\ & u^{107} + 4u^{106} + \cdots - 483u - 73 \rangle \\ I_2^u = \langle & u^{28} - 3u^{27} + \cdots + b + 1,\ u^{28} - 3u^{27} + \cdots + a - 9u,\ u^{29} - 3u^{28} + \cdots - 2u - 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 136 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. $\boldsymbol{I_1^u = \langle 5.21 \times 10^{257} u^{106} + 1.97 \times 10^{258} u^{105} + \cdots + 2.30 \times 10^{258} b - 7.01 \times 10^{259},\ 3.58 \times 10^{259} u^{106} + 1.24 \times 10^{260} u^{105} + \cdots + 1.68 \times 10^{260} a - 2.52 \times 10^{261},\ u^{107} + 4u^{106} + \cdots - 483u - 73 \rangle}$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.212915u^{106} - 0.739501u^{105} + \cdots + 101.803u + 15.0010 \\ -0.226332u^{106} - 0.857184u^{105} + \cdots + 177.752u + 30.4323 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -0.439248u^{106} - 1.59668u^{105} + \cdots + 279.555u + 45.4333 \\ -0.226332u^{106} - 0.857184u^{105} + \cdots + 177.752u + 30.4323 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.123007u^{106} + 0.551956u^{105} + \cdots - 157.461u - 29.3307 \\ -0.229569u^{106} - 0.814640u^{105} + \cdots + 117.742u + 14.6676 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.00230451u^{106} + 0.0563939u^{105} + \cdots - 28.3080u - 6.07926 \\ -0.188322u^{106} - 0.672436u^{105} + \cdots + 120.647u + 18.4732 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0594793u^{106} - 0.378432u^{105} + \cdots + 133.484u + 30.4867 \\ 0.163564u^{106} + 0.562767u^{105} + \cdots - 66.1325u - 7.77903 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.246809u^{106} - 0.950539u^{105} + \cdots + 205.903u + 35.7170 \\ -0.0577528u^{106} - 0.148404u^{105} + \cdots + 9.54089u + 0.162526 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.263947u^{106} - 0.706517u^{105} + \cdots + 3.41770u - 12.5330 \\ -0.149436u^{106} - 0.565875u^{105} + \cdots + 79.2134u + 13.2693 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.244162u^{106} + 1.15603u^{105} + \cdots - 309.404u - 76.0924$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{107} + 36u^{106} + \cdots + 13126u + 169$
c_2, c_5	$u^{107} + 4u^{106} + \cdots + 62u + 13$
c_3, c_7	$u^{107} + u^{106} + \cdots + 48147u + 6813$
c_4, c_{10}	$u^{107} - u^{106} + \cdots + 3u + 1$
c_6	$u^{107} + 8u^{106} + \cdots + 543511u + 190727$
c_8, c_9, c_{12}	$u^{107} - 4u^{106} + \cdots - 483u + 73$
c_{11}	$u^{107} - 2u^{106} + \cdots + 11893095u + 1360881$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{107} + 84y^{106} + \cdots + 7091334y - 28561$
c_2, c_5	$y^{107} - 36y^{106} + \cdots + 13126y - 169$
c_3, c_7	$y^{107} + 105y^{106} + \cdots + 2042098101y - 46416969$
c_4, c_{10}	$y^{107} + 81y^{106} + \cdots - 149y - 1$
c_6	$y^{107} + 50y^{106} + \cdots - 3420315175277y - 36376788529$
c_8, c_9, c_{12}	$y^{107} + 118y^{106} + \cdots - 28197y - 5329$
c_{11}	$y^{107} + 54y^{106} + \cdots - 41256150131529y - 1851997096161$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.218610 + 0.960768I$ $a = 0.031709 - 0.835470I$ $b = 0.136668 + 0.794570I$	$1.98878 - 1.86222I$	0
$u = 0.218610 - 0.960768I$ $a = 0.031709 + 0.835470I$ $b = 0.136668 - 0.794570I$	$1.98878 + 1.86222I$	0
$u = 0.178070 + 0.949675I$ $a = 0.171856 + 1.326040I$ $b = 0.323476 - 0.368056I$	$-0.300806 + 0.353871I$	0
$u = 0.178070 - 0.949675I$ $a = 0.171856 - 1.326040I$ $b = 0.323476 + 0.368056I$	$-0.300806 - 0.353871I$	0
$u = -0.783922 + 0.745149I$ $a = -0.698638 - 0.803371I$ $b = -0.29188 + 1.42963I$	$9.48816 + 6.75650I$	0
$u = -0.783922 - 0.745149I$ $a = -0.698638 + 0.803371I$ $b = -0.29188 - 1.42963I$	$9.48816 - 6.75650I$	0
$u = -0.999180 + 0.440515I$ $a = 0.613313 + 0.313829I$ $b = -0.065695 - 1.351740I$	$8.42811 - 0.88003I$	0
$u = -0.999180 - 0.440515I$ $a = 0.613313 - 0.313829I$ $b = -0.065695 + 1.351740I$	$8.42811 + 0.88003I$	0
$u = -0.420955 + 0.792129I$ $a = -0.277410 - 0.472034I$ $b = 0.478629 + 1.266620I$	$3.14366 - 3.02337I$	0
$u = -0.420955 - 0.792129I$ $a = -0.277410 + 0.472034I$ $b = 0.478629 - 1.266620I$	$3.14366 + 3.02337I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.899486+0.659039I$ $a=\ \ 0.823880+0.629890I$ $b=\ \ 0.38198-1.51032I$	$8.4150+12.8690I$	0
$u=-0.899486-0.659039I$ $a=\ \ 0.823880-0.629890I$ $b=\ \ 0.38198+1.51032I$	$8.4150-12.8690I$	0
$u=\ \ 0.399707+1.055290I$ $a=-0.534124+0.874749I$ $b=-0.324208-0.576078I$	$0.35578-5.00163I$	0
$u=\ \ 0.399707-1.055290I$ $a=-0.534124-0.874749I$ $b=-0.324208+0.576078I$	$0.35578+5.00163I$	0
$u=-0.998726+0.597608I$ $a=-0.549600-0.314043I$ $b=\ \ 0.15549+1.46448I$	$8.13008-6.62914I$	0
$u=-0.998726-0.597608I$ $a=-0.549600+0.314043I$ $b=\ \ 0.15549-1.46448I$	$8.13008+6.62914I$	0
$u=\ \ 1.046100+0.646723I$ $a=-0.642818+0.564506I$ $b=-0.199047-1.344890I$	$3.29521-6.21464I$	0
$u=\ \ 1.046100-0.646723I$ $a=-0.642818-0.564506I$ $b=-0.199047+1.344890I$	$3.29521+6.21464I$	0
$u=\ \ 0.473375+1.139120I$ $a=\ \ 0.033224-0.777814I$ $b=-0.343973+0.921097I$	$1.19870-2.22621I$	0
$u=\ \ 0.473375-1.139120I$ $a=\ \ 0.033224+0.777814I$ $b=-0.343973-0.921097I$	$1.19870+2.22621I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.135722+1.236710I$ $a=\ \ 0.541906-0.835595I$ $b=-0.507847+0.864637I$	$7.89506+3.99906I$	0
$u=-0.135722-1.236710I$ $a=\ \ 0.541906+0.835595I$ $b=-0.507847-0.864637I$	$7.89506-3.99906I$	0
$u=\ \ 0.737344+0.114473I$ $a=-0.382379+0.206236I$ $b=-0.388809+0.493846I$	$-2.45708+0.94725I$	0
$u=\ \ 0.737344-0.114473I$ $a=-0.382379-0.206236I$ $b=-0.388809-0.493846I$	$-2.45708-0.94725I$	0
$u=\ \ 0.536312+0.497351I$ $a=-0.774722-0.446023I$ $b=-0.603705+0.015366I$	$-0.98968-3.39522I$	0
$u=\ \ 0.536312-0.497351I$ $a=-0.774722+0.446023I$ $b=-0.603705-0.015366I$	$-0.98968+3.39522I$	0
$u=\ \ 0.979345+0.811967I$ $a=\ \ 0.505582-0.602981I$ $b=\ \ 0.037448+1.353530I$	$3.76717-0.64138I$	0
$u=\ \ 0.979345-0.811967I$ $a=\ \ 0.505582+0.602981I$ $b=\ \ 0.037448-1.353530I$	$3.76717+0.64138I$	0
$u=\ \ 0.383425+0.615041I$ $a=\ \ 0.890349-0.220224I$ $b=\ \ 0.36445+1.57973I$	$6.65627+1.23162I$	0
$u=\ \ 0.383425-0.615041I$ $a=\ \ 0.890349+0.220224I$ $b=\ \ 0.36445-1.57973I$	$6.65627-1.23162I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.454638+0.534981I$ $a=\ \ 0.882894-0.100518I$ $b=\ \ 1.098940-0.341308I$	$2.39167+7.72468I$	0
$u=-0.454638-0.534981I$ $a=\ \ 0.882894+0.100518I$ $b=\ \ 1.098940+0.341308I$	$2.39167-7.72468I$	0
$u=\ \ 0.282605+1.286600I$ $a=\ \ 0.212333-0.050080I$ $b=-0.259293+0.506487I$	$1.88632-2.72331I$	0
$u=\ \ 0.282605-1.286600I$ $a=\ \ 0.212333+0.050080I$ $b=-0.259293-0.506487I$	$1.88632+2.72331I$	0
$u=-0.267787+0.619016I$ $a=-1.254590-0.606143I$ $b=-0.007919+1.214800I$	$3.35613-1.33160I$	$-4.65848+4.10187I$
$u=-0.267787-0.619016I$ $a=-1.254590+0.606143I$ $b=-0.007919-1.214800I$	$3.35613+1.33160I$	$-4.65848-4.10187I$
$u=-0.462761+0.433765I$ $a=\ \ 0.787952-1.141590I$ $b=-0.325099-0.050785I$	$3.92673+0.31538I$	$-6.76967-3.93949I$
$u=-0.462761-0.433765I$ $a=\ \ 0.787952+1.141590I$ $b=-0.325099+0.050785I$	$3.92673-0.31538I$	$-6.76967+3.93949I$
$u=-0.534765+0.320382I$ $a=\ \ 0.636795+0.790761I$ $b=\ \ 0.890340+0.146077I$	$-1.29323+1.53588I$	$-13.42761-4.38329I$
$u=-0.534765-0.320382I$ $a=\ \ 0.636795-0.790761I$ $b=\ \ 0.890340-0.146077I$	$-1.29323-1.53588I$	$-13.42761+4.38329I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.476941 + 0.375324I$ $a = -2.54178 - 0.56211I$ $b = -0.004582 - 1.299540I$	$5.88527 - 4.31483I$	$-6.48516 + 8.06360I$
$u = 0.476941 - 0.375324I$ $a = -2.54178 + 0.56211I$ $b = -0.004582 + 1.299540I$	$5.88527 + 4.31483I$	$-6.48516 - 8.06360I$
$u = -0.203320 + 1.392950I$ $a = -0.605246 + 0.581908I$ $b = 0.899558 + 0.224964I$	$4.16050 + 4.25687I$	0
$u = -0.203320 - 1.392950I$ $a = -0.605246 - 0.581908I$ $b = 0.899558 - 0.224964I$	$4.16050 - 4.25687I$	0
$u = -0.318264 + 0.494085I$ $a = -1.39145 + 2.04833I$ $b = 0.245903 + 0.248452I$	$2.23865 - 4.85466I$	$-9.94637 + 0.I$
$u = -0.318264 - 0.494085I$ $a = -1.39145 - 2.04833I$ $b = 0.245903 - 0.248452I$	$2.23865 + 4.85466I$	$-9.94637 + 0.I$
$u = 0.513094 + 0.257335I$ $a = -1.40246 + 1.48229I$ $b = -0.181209 - 0.890527I$	$-1.33328 - 1.54721I$	$-13.6640 + 4.4882I$
$u = 0.513094 - 0.257335I$ $a = -1.40246 - 1.48229I$ $b = -0.181209 + 0.890527I$	$-1.33328 + 1.54721I$	$-13.6640 - 4.4882I$
$u = -0.420316 + 0.386592I$ $a = 1.83141 + 0.10916I$ $b = 0.339855 - 1.201640I$	$2.56216 + 3.89824I$	$-6.24282 - 0.67021I$
$u = -0.420316 - 0.386592I$ $a = 1.83141 - 0.10916I$ $b = 0.339855 + 1.201640I$	$2.56216 - 3.89824I$	$-6.24282 + 0.67021I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.398457+0.405382I$ $a=-0.259591+0.248416I$ $b=-0.892262+0.384244I$	$3.82071+2.68491I$	$-7.21505-5.03363I$
$u=-0.398457-0.405382I$ $a=-0.259591-0.248416I$ $b=-0.892262-0.384244I$	$3.82071-2.68491I$	$-7.21505+5.03363I$
$u=-0.462411+0.313276I$ $a=\ \ 2.31541+1.59947I$ $b=\ \ 0.430288-1.125340I$	$1.68920+6.25554I$	$-12.0000-9.4737I$
$u=-0.462411-0.313276I$ $a=\ \ 2.31541-1.59947I$ $b=\ \ 0.430288+1.125340I$	$1.68920-6.25554I$	$-12.0000+9.4737I$
$u=\ \ 0.141009+0.537372I$ $a=\ \ 2.45726-2.14497I$ $b=-0.202138+1.255300I$	$7.52473+2.42383I$	$1.87844-0.64135I$
$u=\ \ 0.141009-0.537372I$ $a=\ \ 2.45726+2.14497I$ $b=-0.202138-1.255300I$	$7.52473-2.42383I$	$1.87844+0.64135I$
$u=-0.11088+1.46566I$ $a=\ \ 0.56373+2.06801I$ $b=-0.42043-1.41957I$	$9.67450-0.61315I$	0
$u=-0.11088-1.46566I$ $a=\ \ 0.56373-2.06801I$ $b=-0.42043+1.41957I$	$9.67450+0.61315I$	0
$u=\ \ 0.327146+0.408184I$ $a=-1.324250+0.413854I$ $b=-0.59487-1.55575I$	$6.98229-4.18282I$	$-3.31697+8.82974I$
$u=\ \ 0.327146-0.408184I$ $a=-1.324250-0.413854I$ $b=-0.59487+1.55575I$	$6.98229+4.18282I$	$-3.31697-8.82974I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.12035 + 1.49065I$ $a = -0.27753 + 2.33161I$ $b = -0.041278 - 1.261910I$	$4.60174 - 3.57807I$	0
$u = 0.12035 - 1.49065I$ $a = -0.27753 - 2.33161I$ $b = -0.041278 + 1.261910I$	$4.60174 + 3.57807I$	0
$u = -0.11479 + 1.49478I$ $a = 0.47028 + 2.65788I$ $b = 0.287281 - 1.309610I$	$7.77779 + 8.15655I$	0
$u = -0.11479 - 1.49478I$ $a = 0.47028 - 2.65788I$ $b = 0.287281 + 1.309610I$	$7.77779 - 8.15655I$	0
$u = 0.12995 + 1.49543I$ $a = -1.54204 + 1.52645I$ $b = -0.216189 - 1.234570I$	$12.10440 - 6.40349I$	0
$u = 0.12995 - 1.49543I$ $a = -1.54204 - 1.52645I$ $b = -0.216189 + 1.234570I$	$12.10440 + 6.40349I$	0
$u = -0.16019 + 1.49679I$ $a = 0.574231 - 0.305715I$ $b = 0.235248 - 0.036144I$	$10.23880 + 2.60950I$	0
$u = -0.16019 - 1.49679I$ $a = 0.574231 + 0.305715I$ $b = 0.235248 + 0.036144I$	$10.23880 - 2.60950I$	0
$u = -0.12058 + 1.50794I$ $a = 0.58443 + 1.70466I$ $b = 0.58551 - 1.32593I$	$8.92864 + 5.79082I$	0
$u = -0.12058 - 1.50794I$ $a = 0.58443 - 1.70466I$ $b = 0.58551 + 1.32593I$	$8.92864 - 5.79082I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.05256 + 1.51396I$ $a = -0.217301 - 0.202081I$ $b = 1.037180 + 0.357448I$	$5.95168 - 0.36025I$	0
$u = 0.05256 - 1.51396I$ $a = -0.217301 + 0.202081I$ $b = 1.037180 - 0.357448I$	$5.95168 + 0.36025I$	0
$u = -0.07876 + 1.51449I$ $a = 0.701624 - 0.644270I$ $b = -1.45550 + 0.62207I$	$10.25350 + 4.17019I$	0
$u = -0.07876 - 1.51449I$ $a = 0.701624 + 0.644270I$ $b = -1.45550 - 0.62207I$	$10.25350 - 4.17019I$	0
$u = 0.10157 + 1.51875I$ $a = 0.04829 + 2.12071I$ $b = -0.93889 - 1.87708I$	$13.5111 - 5.7274I$	0
$u = 0.10157 - 1.51875I$ $a = 0.04829 - 2.12071I$ $b = -0.93889 + 1.87708I$	$13.5111 + 5.7274I$	0
$u = 0.141729 + 0.447070I$ $a = 0.389613 + 1.309160I$ $b = 0.484950 + 0.073373I$	$-0.558690 + 0.435240I$	$-13.16075 + 1.11488I$
$u = 0.141729 - 0.447070I$ $a = 0.389613 - 1.309160I$ $b = 0.484950 - 0.073373I$	$-0.558690 - 0.435240I$	$-13.16075 - 1.11488I$
$u = -0.04407 + 1.53395I$ $a = -0.636604 - 0.028543I$ $b = -0.491435 + 0.324169I$	$9.16812 - 3.84604I$	0
$u = -0.04407 - 1.53395I$ $a = -0.636604 + 0.028543I$ $b = -0.491435 - 0.324169I$	$9.16812 + 3.84604I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.02073 + 1.54207I$ $a = 0.84675 - 2.52362I$ $b = 0.017497 + 1.330960I$	$14.5710 + 1.9650I$	0
$u = 0.02073 - 1.54207I$ $a = 0.84675 + 2.52362I$ $b = 0.017497 - 1.330960I$	$14.5710 - 1.9650I$	0
$u = 0.16163 + 1.53836I$ $a = 0.225279 + 0.170191I$ $b = -1.075420 - 0.085848I$	$5.83460 - 5.91752I$	0
$u = 0.16163 - 1.53836I$ $a = 0.225279 - 0.170191I$ $b = -1.075420 + 0.085848I$	$5.83460 + 5.91752I$	0
$u = -0.13844 + 1.55199I$ $a = -0.704780 + 0.620989I$ $b = 1.65352 - 0.40742I$	$9.43130 + 9.88978I$	0
$u = -0.13844 - 1.55199I$ $a = -0.704780 - 0.620989I$ $b = 1.65352 + 0.40742I$	$9.43130 - 9.88978I$	0
$u = -0.03795 + 1.56754I$ $a = -0.30023 - 1.90446I$ $b = -0.29998 + 1.49901I$	$10.81920 - 0.43166I$	0
$u = -0.03795 - 1.56754I$ $a = -0.30023 + 1.90446I$ $b = -0.29998 - 1.49901I$	$10.81920 + 0.43166I$	0
$u = 0.07869 + 1.58239I$ $a = -0.06364 - 1.99815I$ $b = 0.74333 + 2.06303I$	$14.1741 - 0.3259I$	0
$u = 0.07869 - 1.58239I$ $a = -0.06364 + 1.99815I$ $b = 0.74333 - 2.06303I$	$14.1741 + 0.3259I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.23936+1.61844I$ $a=-0.48005-1.89887I$ $b=-0.43878+1.61218I$	$17.3391+10.5622I$	0
$u=-0.23936-1.61844I$ $a=-0.48005+1.89887I$ $b=-0.43878-1.61218I$	$17.3391-10.5622I$	0
$u=-0.30020+1.60868I$ $a=\ \ 0.61408+1.79515I$ $b=\ \ 0.55307-1.62905I$	$15.8563+17.3211I$	0
$u=-0.30020-1.60868I$ $a=\ \ 0.61408-1.79515I$ $b=\ \ 0.55307+1.62905I$	$15.8563-17.3211I$	0
$u=-0.39503+1.59788I$ $a=\ \ 0.76123+1.40447I$ $b=\ \ 0.166532-1.386090I$	$15.0145+4.3541I$	0
$u=-0.39503-1.59788I$ $a=\ \ 0.76123-1.40447I$ $b=\ \ 0.166532+1.386090I$	$15.0145-4.3541I$	0
$u=-0.05430+1.65387I$ $a=-0.22797-1.75899I$ $b=\ \ 0.15024+1.86593I$	$11.86160-1.46045I$	0
$u=-0.05430-1.65387I$ $a=-0.22797+1.75899I$ $b=\ \ 0.15024-1.86593I$	$11.86160+1.46045I$	0
$u=-0.325540+0.093169I$ $a=\ \ 1.53708+0.78756I$ $b=-0.548176-0.981523I$	$4.26238-2.15362I$	$-14.5846+5.0933I$
$u=-0.325540-0.093169I$ $a=\ \ 1.53708-0.78756I$ $b=-0.548176+0.981523I$	$4.26238+2.15362I$	$-14.5846-5.0933I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.32722 + 1.63615I$ $a = -0.59621 + 1.60182I$ $b = -0.43198 - 1.44422I$	$10.8326 - 11.2575I$	0
$u = 0.32722 - 1.63615I$ $a = -0.59621 - 1.60182I$ $b = -0.43198 + 1.44422I$	$10.8326 + 11.2575I$	0
$u = 0.24302 + 1.66340I$ $a = 0.41953 - 1.67154I$ $b = 0.31142 + 1.51218I$	$12.18450 - 5.07799I$	0
$u = 0.24302 - 1.66340I$ $a = 0.41953 + 1.67154I$ $b = 0.31142 - 1.51218I$	$12.18450 + 5.07799I$	0
$u = -0.32773 + 1.67521I$ $a = -0.59722 - 1.42967I$ $b = -0.12777 + 1.53523I$	$15.6605 - 1.5214I$	0
$u = -0.32773 - 1.67521I$ $a = -0.59722 + 1.42967I$ $b = -0.12777 - 1.53523I$	$15.6605 + 1.5214I$	0
$u = 0.275965$ $a = -0.570569$ $b = 0.339181$	-0.579142	-17.1090

II.

$\boldsymbol{I_2^u = \langle u^{28}-3u^{27}+\cdots+b+1,\ u^{28}-3u^{27}+\cdots+a-9u,\ u^{29}-3u^{28}+\cdots-2u-1\rangle}$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{28}+3u^{27}+\cdots+9u^2+9u \\ -u^{28}+3u^{27}+\cdots-u-1 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -2u^{28}+6u^{27}+\cdots+8u-1 \\ -u^{28}+3u^{27}+\cdots-u-1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{26}+4u^{25}+\cdots-2u-1 \\ -u^5+u^4-3u^3+2u^2-2u+1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^2+1 \\ u^4+2u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{26}+4u^{25}+\cdots-4u-1 \\ -u^{28}+3u^{27}+\cdots-u+1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{28}+3u^{27}+\cdots-3u-6 \\ -u^{27}+4u^{26}+\cdots+11u^3-4u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^{26}+3u^{25}+\cdots+6u^2+9u \\ u^{28}-3u^{27}+\cdots-2u-2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^{28}+3u^{27}+\cdots+5u+4 \\ u^{27}-4u^{26}+\cdots-2u-1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= -2u^{28}+2u^{27}-35u^{26}+40u^{25}-287u^{24}+347u^{23}-1444u^{22}+1720u^{21}-4869u^{20}+5365u^{19}-11288u^{18}+10857u^{17}-17856u^{16}+14038u^{15}-18593u^{14}+10722u^{13}-11806u^{12}+3674u^{11}-3899u^{10}-380u^9-483u^8-446u^7-52u^6+66u^5+31u^4+77u^3+39u^2+27u+2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{29} - 13u^{28} + \cdots + 13u - 1$
c_2	$u^{29} + 3u^{28} + \cdots - 3u - 1$
c_3	$u^{29} + 16u^{27} + \cdots + 8u - 1$
c_4	$u^{29} + 10u^{27} + \cdots - 2u + 1$
c_5	$u^{29} - 3u^{28} + \cdots - 3u + 1$
c_6	$u^{29} - u^{28} + \cdots - 7u^2 - 1$
c_7	$u^{29} + 16u^{27} + \cdots + 8u + 1$
c_8, c_9	$u^{29} - 3u^{28} + \cdots - 2u - 1$
c_{10}	$u^{29} + 10u^{27} + \cdots - 2u - 1$
c_{11}	$u^{29} + u^{28} + \cdots + 13u^2 + 1$
c_{12}	$u^{29} + 3u^{28} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{29} + 19y^{28} + \cdots - 11y - 1$
c_2, c_5	$y^{29} - 13y^{28} + \cdots + 13y - 1$
c_3, c_7	$y^{29} + 32y^{28} + \cdots - 16y - 1$
c_4, c_{10}	$y^{29} + 20y^{28} + \cdots + 26y - 1$
c_6	$y^{29} + 9y^{28} + \cdots - 14y - 1$
c_8, c_9, c_{12}	$y^{29} + 33y^{28} + \cdots - 10y - 1$
c_{11}	$y^{29} + 9y^{28} + \cdots - 26y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.320010 + 0.929198I$ $a = 0.39466 + 1.70289I$ $b = 0.038419 - 0.734900I$	$0.433243 + 0.124395I$	$-4.84474 + 0.20044I$
$u = 0.320010 - 0.929198I$ $a = 0.39466 - 1.70289I$ $b = 0.038419 + 0.734900I$	$0.433243 - 0.124395I$	$-4.84474 - 0.20044I$
$u = 0.619532 + 0.742782I$ $a = -1.056600 + 0.712156I$ $b = -0.215695 - 1.137310I$	$2.22927 - 4.93398I$	$-8.38230 + 6.45291I$
$u = 0.619532 - 0.742782I$ $a = -1.056600 - 0.712156I$ $b = -0.215695 + 1.137310I$	$2.22927 + 4.93398I$	$-8.38230 - 6.45291I$
$u = 0.643736 + 0.904472I$ $a = 0.683690 - 0.546558I$ $b = -0.044141 + 1.253420I$	$2.67368 + 0.08755I$	$-9.01016 - 0.85925I$
$u = 0.643736 - 0.904472I$ $a = 0.683690 + 0.546558I$ $b = -0.044141 - 1.253420I$	$2.67368 - 0.08755I$	$-9.01016 + 0.85925I$
$u = 0.409561 + 1.069620I$ $a = -0.284586 - 0.522394I$ $b = -0.295871 + 0.778735I$	$1.02762 - 2.88773I$	$-9.85449 + 8.09995I$
$u = 0.409561 - 1.069620I$ $a = -0.284586 + 0.522394I$ $b = -0.295871 - 0.778735I$	$1.02762 + 2.88773I$	$-9.85449 - 8.09995I$
$u = -0.142765 + 1.249060I$ $a = -0.833830 + 1.067700I$ $b = 0.601906 - 0.712923I$	$7.51370 + 3.35651I$	$-8.50874 + 0.95421I$
$u = -0.142765 - 1.249060I$ $a = -0.833830 - 1.067700I$ $b = 0.601906 + 0.712923I$	$7.51370 - 3.35651I$	$-8.50874 - 0.95421I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.062902+1.256950I$ $a=\ \ 1.177200+0.201358I$ $b=-0.382326+0.682765I$	$5.57353+6.14807I$	$-6.11924-5.75813I$
$u=-0.062902-1.256950I$ $a=\ \ 1.177200-0.201358I$ $b=-0.382326-0.682765I$	$5.57353-6.14807I$	$-6.11924+5.75813I$
$u=\ \ 0.219923+1.280020I$ $a=-0.089089+0.378279I$ $b=-0.162580+0.225216I$	$1.55717-3.04406I$	$-15.4554+7.1702I$
$u=\ \ 0.219923-1.280020I$ $a=-0.089089-0.378279I$ $b=-0.162580-0.225216I$	$1.55717+3.04406I$	$-15.4554-7.1702I$
$u=\ \ 0.615147$ $a=-0.815486$ $b=-0.341615$	-2.42903	-16.1420
$u=-0.15234+1.44097I$ $a=\ \ 0.77709+1.42350I$ $b=\ \ 0.446284-1.339670I$	$11.44890+5.04952I$	$-4.21898-2.62364I$
$u=-0.15234-1.44097I$ $a=\ \ 0.77709-1.42350I$ $b=\ \ 0.446284+1.339670I$	$11.44890-5.04952I$	$-4.21898+2.62364I$
$u=-0.263492+0.446508I$ $a=\ \ 0.390765-1.123370I$ $b=\ \ 0.590532+1.084710I$	$4.70619-1.81374I$	$-2.21768-3.11805I$
$u=-0.263492-0.446508I$ $a=\ \ 0.390765+1.123370I$ $b=\ \ 0.590532-1.084710I$	$4.70619+1.81374I$	$-2.21768+3.11805I$
$u=-0.019923+0.460345I$ $a=-2.10006+3.07543I$ $b=-0.385295-0.880991I$	$2.73526-5.65484I$	$-4.63168+7.14796I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.019923-0.460345I$ $a=-2.10006-3.07543I$ $b=-0.385295+0.880991I$	$2.73526+5.65484I$	$-4.63168-7.14796I$
$u=0.09517+1.53920I$ $a=-0.61440+1.61562I$ $b=-0.599071-1.143990I$	$9.89424-6.58410I$	$-3.77263+5.83456I$
$u=0.09517-1.53920I$ $a=-0.61440-1.61562I$ $b=-0.599071+1.143990I$	$9.89424+6.58410I$	$-3.77263-5.83456I$
$u=-0.09903+1.55874I$ $a=-0.50230-1.90709I$ $b=-0.04502+1.69043I$	$12.87670-1.34074I$	$-2.57674+2.90001I$
$u=-0.09903-1.55874I$ $a=-0.50230+1.90709I$ $b=-0.04502-1.69043I$	$12.87670+1.34074I$	$-2.57674-2.90001I$
$u=-0.01439+1.61720I$ $a=-0.13191-1.82061I$ $b=0.42135+1.72225I$	$12.44350-0.92978I$	$-2.68721+0.I$
$u=-0.01439-1.61720I$ $a=-0.13191+1.82061I$ $b=0.42135-1.72225I$	$12.44350+0.92978I$	$-2.68721+0.I$
$u=-0.360674+0.121864I$ $a=-1.40289+1.84758I$ $b=0.20232+1.44582I$	$6.70328-3.10811I$	$-5.14888+2.92110I$
$u=-0.360674-0.121864I$ $a=-1.40289-1.84758I$ $b=0.20232-1.44582I$	$6.70328+3.10811I$	$-5.14888-2.92110I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{29}-13u^{28}+\cdots+13u-1)(u^{107}+36u^{106}+\cdots+13126u+169)$
c_2	$(u^{29}+3u^{28}+\cdots-3u-1)(u^{107}+4u^{106}+\cdots+62u+13)$
c_3	$(u^{29}+16u^{27}+\cdots+8u-1)(u^{107}+u^{106}+\cdots+48147u+6813)$
c_4	$(u^{29}+10u^{27}+\cdots-2u+1)(u^{107}-u^{106}+\cdots+3u+1)$
c_5	$(u^{29}-3u^{28}+\cdots-3u+1)(u^{107}+4u^{106}+\cdots+62u+13)$
c_6	$(u^{29}-u^{28}+\cdots-7u^2-1)(u^{107}+8u^{106}+\cdots+543511u+190727)$
c_7	$(u^{29}+16u^{27}+\cdots+8u+1)(u^{107}+u^{106}+\cdots+48147u+6813)$
c_8, c_9	$(u^{29}-3u^{28}+\cdots-2u-1)(u^{107}-4u^{106}+\cdots-483u+73)$
c_{10}	$(u^{29}+10u^{27}+\cdots-2u-1)(u^{107}-u^{106}+\cdots+3u+1)$
c_{11}	$(u^{29}+u^{28}+\cdots+13u^2+1)$ $\cdot(u^{107}-2u^{106}+\cdots+11893095u+1360881)$
c_{12}	$(u^{29}+3u^{28}+\cdots-2u+1)(u^{107}-4u^{106}+\cdots-483u+73)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{29}+19y^{28}+\cdots-11y-1)$ $\cdot(y^{107}+84y^{106}+\cdots+7091334y-28561)$
c_2, c_5	$(y^{29}-13y^{28}+\cdots+13y-1)(y^{107}-36y^{106}+\cdots+13126y-169)$
c_3, c_7	$(y^{29}+32y^{28}+\cdots-16y-1)$ $\cdot(y^{107}+105y^{106}+\cdots+2042098101y-46416969)$
c_4, c_{10}	$(y^{29}+20y^{28}+\cdots+26y-1)(y^{107}+81y^{106}+\cdots-149y-1)$
c_6	$(y^{29}+9y^{28}+\cdots-14y-1)$ $\cdot(y^{107}+50y^{106}+\cdots-3420315175277y-36376788529)$
c_8, c_9, c_{12}	$(y^{29}+33y^{28}+\cdots-10y-1)(y^{107}+118y^{106}+\cdots-28197y-5329)$
c_{11}	$(y^{29}+9y^{28}+\cdots-26y-1)$ $\cdot(y^{107}+54y^{106}+\cdots-41256150131529y-1851997096161)$