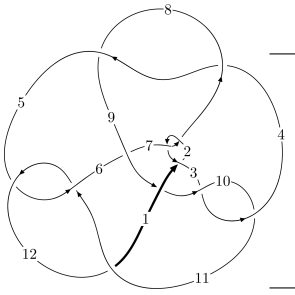
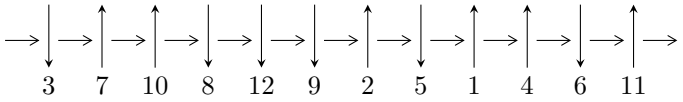
$12a_{0627}$ $(K12a_{0627})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 6.74702 \times 10^{811} u^{141} + 1.09442 \times 10^{812} u^{140} + \cdots + 3.41875 \times 10^{813} b - 2.08476 \times 10^{815}, \\ & 1.09226 \times 10^{816} u^{141} + 1.97778 \times 10^{816} u^{140} + \cdots + 7.17596 \times 10^{816} a - 4.28834 \times 10^{819}, \\ & u^{142} + u^{141} + \cdots - 907109 u + 2099 \rangle \\ I_2^u = \langle & 1264191898 u^{27} + 4324326347 u^{26} + \cdots + 52008813 b + 2153585138, \\ & 2700862307 u^{27} + 9574821553 u^{26} + \cdots + 52008813 a + 5465518489,\ u^{28} + 4 u^{27} + \cdots + 4 u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 170 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. $\boldsymbol{I_1^u = \langle 6.75 \times 10^{811} u^{141} + 1.09 \times 10^{812} u^{140} + \cdots + 3.42 \times 10^{813} b - 2.08 \times 10^{815},\ 1.09 \times 10^{816} u^{141} + 1.98 \times 10^{816} u^{140} + \cdots + 7.18 \times 10^{816} a - 4.29 \times 10^{819},\ u^{142} + u^{141} + \cdots - 907109 u + 2099 \rangle}$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.152212u^{141} - 0.275612u^{140} + \cdots - 167326.u + 597.599 \\ -0.0197353u^{141} - 0.0320124u^{140} + \cdots - 26578.0u + 60.9802 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 0.125998u^{141} + 0.225405u^{140} + \cdots + 139852.u - 473.200 \\ 0.0772454u^{141} + 0.149742u^{140} + \cdots + 75128.4u - 173.760 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.119370u^{141} - 0.218578u^{140} + \cdots - 127989.u + 612.605 \\ -0.0471017u^{141} - 0.0899098u^{140} + \cdots - 46092.1u + 105.834 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.297171u^{141} - 0.547343u^{140} + \cdots - 316063.u + 393.790 \\ -0.0689418u^{141} - 0.131837u^{140} + \cdots - 69332.9u + 162.006 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.203243u^{141} + 0.375147u^{140} + \cdots + 214980.u - 646.960 \\ 0.0772454u^{141} + 0.149742u^{140} + \cdots + 75128.4u - 173.760 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.355590u^{141} + 0.673424u^{140} + \cdots + 358791.u - 883.101 \\ 0.175090u^{141} + 0.317526u^{140} + \cdots + 193670.u - 449.231 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.166507u^{141} + 0.296018u^{140} + \cdots + 191000.u - 190.579 \\ 0.110343u^{141} + 0.205179u^{140} + \cdots + 116314.u - 270.736 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.179184u^{141} + 0.325133u^{140} + \cdots + 194744.u - 600.039 \\ 0.0802693u^{141} + 0.155031u^{140} + \cdots + 78385.4u - 181.319 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.0416421u^{141} - 0.0832729u^{140} + \cdots - 41293.2u + 89.3667$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$9(9u^{142}+519u^{141}+\cdots+57707u+5329)$
c_2, c_7	$3(3u^{142}+3u^{141}+\cdots+359u-73)$
c_3, c_{10}	$u^{142}+u^{141}+\cdots-907109u+2099$
c_4, c_8	$u^{142}-u^{141}+\cdots+907109u+2099$
c_5, c_{11}	$3(3u^{142}-3u^{141}+\cdots-359u-73)$
c_6	$u^{142}-4u^{141}+\cdots+76091739u-4428063$
c_9	$u^{142}+4u^{141}+\cdots-76091739u-4428063$
c_{12}	$9(9u^{142}-519u^{141}+\cdots-57707u+5329)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$81(81y^{142} + 6327y^{141} + \cdots - 2.56016 \times 10^9 y + 2.83982 \times 10^7)$
c_2, c_5, c_7 c_{11}	$9(9y^{142} + 519y^{141} + \cdots + 57707y + 5329)$
c_3, c_4, c_8 c_{10}	$y^{142} - 93y^{141} + \cdots - 823753833325y + 4405801$
c_6, c_9	$y^{142} - 26y^{141} + \cdots - 783996286987719y + 19607741931969$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.999777 + 0.091981I$ $a = 1.75501 + 0.96204I$ $b = -1.11776 - 1.04446I$	$0.115587 + 0.315701I$	0
$u = 0.999777 - 0.091981I$ $a = 1.75501 - 0.96204I$ $b = -1.11776 + 1.04446I$	$0.115587 - 0.315701I$	0
$u = 0.972850 + 0.179673I$ $a = 0.737834 + 0.307202I$ $b = -0.132900 + 1.074160I$	$1.78140 + 1.19765I$	0
$u = 0.972850 - 0.179673I$ $a = 0.737834 - 0.307202I$ $b = -0.132900 - 1.074160I$	$1.78140 - 1.19765I$	0
$u = 0.097398 + 0.982037I$ $a = 0.851382 - 0.422463I$ $b = -0.698611 - 0.418753I$	$-3.66799 - 2.04886I$	0
$u = 0.097398 - 0.982037I$ $a = 0.851382 + 0.422463I$ $b = -0.698611 + 0.418753I$	$-3.66799 + 2.04886I$	0
$u = 0.891887 + 0.409098I$ $a = -0.266032 - 0.098205I$ $b = 0.688939 + 0.119170I$	$-0.62703 - 2.36846I$	0
$u = 0.891887 - 0.409098I$ $a = -0.266032 + 0.098205I$ $b = 0.688939 - 0.119170I$	$-0.62703 + 2.36846I$	0
$u = -0.582706 + 0.835940I$ $a = 1.115760 + 0.211551I$ $b = -0.134406 + 1.156220I$	$-8.51460 - 0.20375I$	0
$u = -0.582706 - 0.835940I$ $a = 1.115760 - 0.211551I$ $b = -0.134406 - 1.156220I$	$-8.51460 + 0.20375I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.735906+0.603682I$ $a=-0.535807-1.237880I$ $b=\ \ 0.377524-1.068500I$	$-4.03516-0.96934I$	0
$u=-0.735906-0.603682I$ $a=-0.535807+1.237880I$ $b=\ \ 0.377524+1.068500I$	$-4.03516+0.96934I$	0
$u=\ \ 0.941778+0.066068I$ $a=-1.86453+0.81269I$ $b=\ \ 1.10557-1.08573I$	$-0.115587+0.315701I$	0
$u=\ \ 0.941778-0.066068I$ $a=-1.86453-0.81269I$ $b=\ \ 1.10557+1.08573I$	$-0.115587-0.315701I$	0
$u=-1.023860+0.260578I$ $a=\ \ 2.78417-1.34157I$ $b=-0.534031+0.941701I$	$-2.54184-8.91574I$	0
$u=-1.023860-0.260578I$ $a=\ \ 2.78417+1.34157I$ $b=-0.534031-0.941701I$	$-2.54184+8.91574I$	0
$u=\ \ 1.048170+0.152717I$ $a=-2.23658-1.78317I$ $b=\ \ 0.526778+0.924900I$	$-3.02313+3.31558I$	0
$u=\ \ 1.048170-0.152717I$ $a=-2.23658+1.78317I$ $b=\ \ 0.526778-0.924900I$	$-3.02313-3.31558I$	0
$u=\ \ 0.907559+0.556741I$ $a=\ \ 1.026920+0.235437I$ $b=\ \ 0.395468-0.905996I$	$-3.81941-1.48950I$	0
$u=\ \ 0.907559-0.556741I$ $a=\ \ 1.026920-0.235437I$ $b=\ \ 0.395468+0.905996I$	$-3.81941+1.48950I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.969830+0.440655I$ $a=-0.527831-0.710169I$ $b=-0.141735-0.979176I$	$-1.16877-1.23928I$	0
$u=-0.969830-0.440655I$ $a=-0.527831+0.710169I$ $b=-0.141735+0.979176I$	$-1.16877+1.23928I$	0
$u=\ \ 0.533762+0.926281I$ $a=-1.215540+0.292203I$ $b=\ \ 0.117807+1.109140I$	$-7.00419-5.60834I$	0
$u=\ \ 0.533762-0.926281I$ $a=-1.215540-0.292203I$ $b=\ \ 0.117807-1.109140I$	$-7.00419+5.60834I$	0
$u=-1.047440+0.220766I$ $a=\ \ 0.260757-0.045770I$ $b=-0.726111+0.058471I$	$-0.78723-1.84537I$	0
$u=-1.047440-0.220766I$ $a=\ \ 0.260757+0.045770I$ $b=-0.726111-0.058471I$	$-0.78723+1.84537I$	0
$u=\ \ 0.822605+0.424676I$ $a=\ \ 0.506086-1.249620I$ $b=-0.395425-1.116900I$	$-4.23196+5.58061I$	0
$u=\ \ 0.822605-0.424676I$ $a=\ \ 0.506086+1.249620I$ $b=-0.395425+1.116900I$	$-4.23196-5.58061I$	0
$u=\ \ 1.07901$ $a=-0.941451$ $b=\ \ 0.586362$	1.80252	0
$u=-0.891486+0.610218I$ $a=-1.014450-0.251121I$ $b=-0.358713-0.930244I$	$-3.57928-3.82983I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.891486-0.610218I$ $a=-1.014450+0.251121I$ $b=-0.358713+0.930244I$	$-3.57928+3.82983I$	0
$u=-0.954768+0.543815I$ $a=\ \ 0.518706-0.032264I$ $b=-0.091462+1.324820I$	$-7.29435-4.89384I$	0
$u=-0.954768-0.543815I$ $a=\ \ 0.518706+0.032264I$ $b=-0.091462-1.324820I$	$-7.29435+4.89384I$	0
$u=-1.089670+0.209938I$ $a=-1.36098+0.43540I$ $b=\ \ 1.083980-0.532524I$	$1.86233-7.66979I$	0
$u=-1.089670-0.209938I$ $a=-1.36098-0.43540I$ $b=\ \ 1.083980+0.532524I$	$1.86233+7.66979I$	0
$u=\ \ 0.504350+0.727388I$ $a=-0.828417-1.023530I$ $b=-0.226989-0.419380I$	$-2.24649+6.43121I$	0
$u=\ \ 0.504350-0.727388I$ $a=-0.828417+1.023530I$ $b=-0.226989+0.419380I$	$-2.24649-6.43121I$	0
$u=\ \ 0.216819+0.829790I$ $a=\ \ 0.284915-0.194348I$ $b=-0.614612+0.638726I$	$0.90427+2.58836I$	0
$u=\ \ 0.216819-0.829790I$ $a=\ \ 0.284915+0.194348I$ $b=-0.614612-0.638726I$	$0.90427-2.58836I$	0
$u=\ \ 0.846878+0.049904I$ $a=\ \ 0.69761+1.28112I$ $b=-0.438756+1.143830I$	$-3.95688-2.31810I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.846878 - 0.049904I$ $a = 0.69761 - 1.28112I$ $b = -0.438756 - 1.143830I$	$-3.95688 + 2.31810I$	0
$u = -0.846164 + 0.050634I$ $a = -3.58337 + 0.37080I$ $b = 0.495605 - 0.781614I$	$-2.52732 - 0.86075I$	0
$u = -0.846164 - 0.050634I$ $a = -3.58337 - 0.37080I$ $b = 0.495605 + 0.781614I$	$-2.52732 + 0.86075I$	0
$u = 1.126400 + 0.264868I$ $a = 0.491028 - 0.645301I$ $b = 0.081994 - 1.072770I$	$0.22187 + 5.50655I$	0
$u = 1.126400 - 0.264868I$ $a = 0.491028 + 0.645301I$ $b = 0.081994 + 1.072770I$	$0.22187 - 5.50655I$	0
$u = -0.046758 + 0.837944I$ $a = 0.95887 + 1.13130I$ $b = -0.617919 + 0.954869I$	$-7.46414I$	0
$u = -0.046758 - 0.837944I$ $a = 0.95887 - 1.13130I$ $b = -0.617919 - 0.954869I$	$7.46414I$	0
$u = 0.831672 + 0.063981I$ $a = 3.53082 - 1.42335I$ $b = -0.496555 + 0.758778I$	$-1.91137 + 4.69879I$	0
$u = 0.831672 - 0.063981I$ $a = 3.53082 + 1.42335I$ $b = -0.496555 - 0.758778I$	$-1.91137 - 4.69879I$	0
$u = 0.608207 + 0.552772I$ $a = -0.581035 - 0.562360I$ $b = 0.277435 - 0.078683I$	$1.21657 + 1.49421I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.608207 - 0.552772I$ $a = -0.581035 + 0.562360I$ $b = 0.277435 + 0.078683I$	$1.21657 - 1.49421I$	0
$u = -0.501974 + 0.645385I$ $a = 0.61974 - 1.42878I$ $b = 0.203287 - 0.572937I$	$-3.03156 - 1.29600I$	0
$u = -0.501974 - 0.645385I$ $a = 0.61974 + 1.42878I$ $b = 0.203287 + 0.572937I$	$-3.03156 + 1.29600I$	0
$u = -0.710613 + 0.386852I$ $a = -0.527263 - 0.920020I$ $b = -0.036444 - 0.874568I$	$-1.21657 - 1.49421I$	0
$u = -0.710613 - 0.386852I$ $a = -0.527263 + 0.920020I$ $b = -0.036444 + 0.874568I$	$-1.21657 + 1.49421I$	0
$u = -1.158390 + 0.322284I$ $a = -1.81306 + 0.42467I$ $b = 0.762237 - 1.171010I$	$-1.86233 - 7.66979I$	0
$u = -1.158390 - 0.322284I$ $a = -1.81306 - 0.42467I$ $b = 0.762237 + 1.171010I$	$-1.86233 + 7.66979I$	0
$u = -0.138862 + 0.779993I$ $a = -0.745625 + 0.918804I$ $b = 0.560504 + 0.944303I$	$-0.90427 + 2.58836I$	0
$u = -0.138862 - 0.779993I$ $a = -0.745625 - 0.918804I$ $b = 0.560504 - 0.944303I$	$-0.90427 - 2.58836I$	0
$u = -0.015459 + 1.212910I$ $a = -0.776979 - 0.330404I$ $b = 0.682661 - 0.496834I$	$-2.22686 + 7.36336I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.015459-1.212910I$ $a=-0.776979+0.330404I$ $b=\ \ 0.682661+0.496834I$	$-2.22686-7.36336I$	0
$u=\ \ 1.083270+0.554918I$ $a=-0.365749+0.080585I$ $b=\ \ 0.052685+1.321760I$	$-5.17123+10.97090I$	0
$u=\ \ 1.083270-0.554918I$ $a=-0.365749-0.080585I$ $b=\ \ 0.052685-1.321760I$	$-5.17123-10.97090I$	0
$u=\ \ 1.164790+0.372631I$ $a=\ \ 1.12015-0.93796I$ $b=-0.670839+0.713909I$	$3.03156+1.29600I$	0
$u=\ \ 1.164790-0.372631I$ $a=\ \ 1.12015+0.93796I$ $b=-0.670839-0.713909I$	$3.03156-1.29600I$	0
$u=-0.726500+0.274603I$ $a=-0.87516+1.25874I$ $b=\ \ 0.454025+1.133080I$	$-3.54930+6.58128I$	0
$u=-0.726500-0.274603I$ $a=-0.87516-1.25874I$ $b=\ \ 0.454025-1.133080I$	$-3.54930-6.58128I$	0
$u=\ \ 0.719072+0.991745I$ $a=-0.365549-0.296675I$ $b=\ \ 0.425467-0.618928I$	$1.16877+1.23928I$	0
$u=\ \ 0.719072-0.991745I$ $a=-0.365549+0.296675I$ $b=\ \ 0.425467+0.618928I$	$1.16877-1.23928I$	0
$u=-0.220808+1.215370I$ $a=\ \ 0.601998-0.227940I$ $b=-0.600537-1.071030I$	$-5.50784+7.05411I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.220808-1.215370I$ $a=\ \ 0.601998+0.227940I$ $b=-0.600537+1.071030I$	$-5.50784-7.05411I$	0
$u=-0.313014+1.198780I$ $a=-0.669670-0.455888I$ $b=\ \ 0.550377-1.024580I$	$-0.22187-5.50655I$	0
$u=-0.313014-1.198780I$ $a=-0.669670+0.455888I$ $b=\ \ 0.550377+1.024580I$	$-0.22187+5.50655I$	0
$u=\ \ 1.209920+0.325524I$ $a=-1.80952+0.25124I$ $b=\ \ 0.696228+1.074220I$	$7.00419+5.60834I$	0
$u=\ \ 1.209920-0.325524I$ $a=-1.80952-0.25124I$ $b=\ \ 0.696228-1.074220I$	$7.00419-5.60834I$	0
$u=-0.735847+0.068590I$ $a=\ \ 2.66777-0.45922I$ $b=-0.829755+0.922463I$	$-6.49239I$	$0.+3.94512I$
$u=-0.735847-0.068590I$ $a=\ \ 2.66777+0.45922I$ $b=-0.829755-0.922463I$	$6.49239I$	$0.-3.94512I$
$u=-0.109133+0.723579I$ $a=-0.10984-1.73124I$ $b=\ \ 0.030418-0.960750I$	$-3.74292-2.45679I$	$-8.05030+3.72068I$
$u=-0.109133-0.723579I$ $a=-0.10984+1.73124I$ $b=\ \ 0.030418+0.960750I$	$-3.74292+2.45679I$	$-8.05030-3.72068I$
$u=\ \ 1.217300+0.377253I$ $a=\ \ 0.771846-0.977373I$ $b=-0.756340+0.570231I$	$3.66799+2.04886I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.217300 - 0.377253I$ $a = 0.771846 + 0.977373I$ $b = -0.756340 - 0.570231I$	$3.66799 - 2.04886I$	0
$u = -1.277520 + 0.179976I$ $a = -0.912720 - 0.799288I$ $b = 0.871633 + 0.580346I$	$8.51460 + 0.20375I$	0
$u = -1.277520 - 0.179976I$ $a = -0.912720 + 0.799288I$ $b = 0.871633 - 0.580346I$	$8.51460 - 0.20375I$	0
$u = -1.170220 + 0.561483I$ $a = 1.92461 + 0.10124I$ $b = -0.647487 + 0.968416I$	$2.24649 - 6.43121I$	0
$u = -1.170220 - 0.561483I$ $a = 1.92461 - 0.10124I$ $b = -0.647487 - 0.968416I$	$2.24649 + 6.43121I$	0
$u = -1.200200 + 0.502408I$ $a = 1.98999 + 0.39932I$ $b = -0.639193 + 1.047390I$	$2.22686 - 7.36336I$	0
$u = -1.200200 - 0.502408I$ $a = 1.98999 - 0.39932I$ $b = -0.639193 - 1.047390I$	$2.22686 + 7.36336I$	0
$u = -1.234980 + 0.475489I$ $a = -1.62970 - 0.39628I$ $b = 0.529717 - 0.884155I$	$0.62703 - 2.36846I$	0
$u = -1.234980 - 0.475489I$ $a = -1.62970 + 0.39628I$ $b = 0.529717 + 0.884155I$	$0.62703 + 2.36846I$	0
$u = -0.230216 + 0.619155I$ $a = -0.540103 + 0.193524I$ $b = 0.447793 + 0.790881I$	$-0.16397 + 1.58168I$	$-1.73401 - 4.14181I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.230216-0.619155I$ $a=-0.540103-0.193524I$ $b=\ \ 0.447793-0.790881I$	$-0.16397-1.58168I$	$-1.73401+4.14181I$
$u=-1.332680+0.212770I$ $a=\ \ 1.052940-0.233537I$ $b=-0.658186+0.298490I$	$4.88571-4.50346I$	0
$u=-1.332680-0.212770I$ $a=\ \ 1.052940+0.233537I$ $b=-0.658186-0.298490I$	$4.88571+4.50346I$	0
$u=\ \ 1.272960+0.507679I$ $a=-1.88998+0.49520I$ $b=\ \ 0.636469+1.075730I$	$3.81719+12.41500I$	0
$u=\ \ 1.272960-0.507679I$ $a=-1.88998-0.49520I$ $b=\ \ 0.636469-1.075730I$	$3.81719-12.41500I$	0
$u=\ \ 0.154609+0.600255I$ $a=-0.354183-0.214624I$ $b=\ \ 0.453342+0.424801I$	$0.16397+1.58168I$	$1.73401-4.14181I$
$u=\ \ 0.154609-0.600255I$ $a=-0.354183+0.214624I$ $b=\ \ 0.453342-0.424801I$	$0.16397-1.58168I$	$1.73401+4.14181I$
$u=\ \ 1.279850+0.521490I$ $a=-1.038380+0.736152I$ $b=\ \ 0.969511-0.516344I$	$7.40396I$	0
$u=\ \ 1.279850-0.521490I$ $a=-1.038380-0.736152I$ $b=\ \ 0.969511+0.516344I$	$-7.40396I$	0
$u=-1.319520+0.412064I$ $a=-0.675707-0.878498I$ $b=\ \ 0.780759+0.509877I$	$5.50784-7.05411I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.319520-0.412064I$ $a=-0.675707+0.878498I$ $b=\ \ 0.780759-0.509877I$	$5.50784+7.05411I$	0
$u=-1.359890+0.291459I$ $a=\ \ 1.172100+0.533418I$ $b=-0.977771-0.454867I$	$7.29435-4.89384I$	0
$u=-1.359890-0.291459I$ $a=\ \ 1.172100-0.533418I$ $b=-0.977771+0.454867I$	$7.29435+4.89384I$	0
$u=\ \ 0.095613+0.591916I$ $a=-1.60351+0.20474I$ $b=\ \ 0.330333+1.109930I$	$-1.78140+1.19765I$	$-3.64845+0.38423I$
$u=\ \ 0.095613-0.591916I$ $a=-1.60351-0.20474I$ $b=\ \ 0.330333-1.109930I$	$-1.78140-1.19765I$	$-3.64845-0.38423I$
$u=\ \ 0.21444+1.41466I$ $a=-0.665299-0.239921I$ $b=\ \ 0.615145-1.050670I$	$-3.81719-12.41500I$	0
$u=\ \ 0.21444-1.41466I$ $a=-0.665299+0.239921I$ $b=\ \ 0.615145+1.050670I$	$-3.81719+12.41500I$	0
$u=\ \ 1.16399+0.83864I$ $a=\ \ 0.726094-0.512444I$ $b=-0.756038+0.749384I$	$2.52732-0.86075I$	0
$u=\ \ 1.16399-0.83864I$ $a=\ \ 0.726094+0.512444I$ $b=-0.756038-0.749384I$	$2.52732+0.86075I$	0
$u=-1.35315+0.57650I$ $a=\ \ 0.967629+0.689260I$ $b=-0.958534-0.512595I$	$1.92426-13.50540I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.35315-0.57650I$ $a=\ \ 0.967629-0.689260I$ $b=-0.958534+0.512595I$	$1.92426+13.50540I$	0
$u=-1.33091+0.62879I$ $a=-1.74900-0.09317I$ $b=\ \ 0.705765-1.136610I$	$-1.92426-13.50540I$	0
$u=-1.33091-0.62879I$ $a=-1.74900+0.09317I$ $b=\ \ 0.705765+1.136610I$	$-1.92426+13.50540I$	0
$u=\ \ 0.185214+0.493202I$ $a=-0.754627+0.798109I$ $b=-0.626584+0.836270I$	$3.74292-2.45679I$	$8.05030+3.72068I$
$u=\ \ 0.185214-0.493202I$ $a=-0.754627-0.798109I$ $b=-0.626584-0.836270I$	$3.74292+2.45679I$	$8.05030-3.72068I$
$u=\ \ 1.40753+0.44874I$ $a=\ \ 1.60725+0.07415I$ $b=-0.697788-1.152910I$	$5.17123+10.97090I$	0
$u=\ \ 1.40753-0.44874I$ $a=\ \ 1.60725-0.07415I$ $b=-0.697788+1.152910I$	$5.17123-10.97090I$	0
$u=-1.09237+0.99596I$ $a=\ \ 1.48373+0.35392I$ $b=-0.708541+0.952527I$	$1.91137-4.69879I$	0
$u=-1.09237-0.99596I$ $a=\ \ 1.48373-0.35392I$ $b=-0.708541-0.952527I$	$1.91137+4.69879I$	0
$u=\ \ 1.46570+0.26957I$ $a=-0.727839+0.808574I$ $b=\ \ 0.514067-0.841069I$	$0.78723-1.84537I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.46570 - 0.26957I$ $a = -0.727839 - 0.808574I$ $b = 0.514067 + 0.841069I$	$0.78723 + 1.84537I$	0
$u = -0.140761 + 0.460221I$ $a = -0.172554 + 0.051885I$ $b = -0.516673 - 1.151240I$	$-4.88571 + 4.50346I$	$-8.93092 - 2.94655I$
$u = -0.140761 - 0.460221I$ $a = -0.172554 - 0.051885I$ $b = -0.516673 + 1.151240I$	$-4.88571 - 4.50346I$	$-8.93092 + 2.94655I$
$u = 1.53803 + 0.13396I$ $a = 1.47179 + 0.07073I$ $b = -0.599428 - 0.875907I$	$4.03516 - 0.96934I$	0
$u = 1.53803 - 0.13396I$ $a = 1.47179 - 0.07073I$ $b = -0.599428 + 0.875907I$	$4.03516 + 0.96934I$	0
$u = 1.38676 + 0.68120I$ $a = 1.69309 - 0.15578I$ $b = -0.702448 - 1.135260I$	$19.5681I$	0
$u = 1.38676 - 0.68120I$ $a = 1.69309 + 0.15578I$ $b = -0.702448 + 1.135260I$	$-19.5681I$	0
$u = -1.52968 + 0.47189I$ $a = -1.086600 - 0.411575I$ $b = 0.710430 + 0.814328I$	$3.81941 + 1.48950I$	0
$u = -1.52968 - 0.47189I$ $a = -1.086600 + 0.411575I$ $b = 0.710430 - 0.814328I$	$3.81941 - 1.48950I$	0
$u = -1.38352 + 0.83192I$ $a = -0.829288 - 0.427999I$ $b = 0.761638 + 0.775917I$	$3.02313 - 3.31558I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.38352-0.83192I$ $a=-0.829288+0.427999I$ $b=\ \ 0.761638-0.775917I$	$3.02313+3.31558I$	0
$u=\ \ 1.48784+0.69259I$ $a=-1.45992-0.06839I$ $b=\ \ 0.675760+0.890812I$	$3.57928+3.82983I$	0
$u=\ \ 1.48784-0.69259I$ $a=-1.45992+0.06839I$ $b=\ \ 0.675760-0.890812I$	$3.57928-3.82983I$	0
$u=\ \ 1.30153+1.02075I$ $a=-1.40447+0.22576I$ $b=\ \ 0.717282+0.933268I$	$2.54184+8.91574I$	0
$u=\ \ 1.30153-1.02075I$ $a=-1.40447-0.22576I$ $b=\ \ 0.717282-0.933268I$	$2.54184-8.91574I$	0
$u=\ \ 1.49706+0.74849I$ $a=\ \ 1.311030-0.316179I$ $b=-0.543821-0.919220I$	$3.54930+6.58128I$	0
$u=\ \ 1.49706-0.74849I$ $a=\ \ 1.311030+0.316179I$ $b=-0.543821+0.919220I$	$3.54930-6.58128I$	0
$u=-1.73977+0.06078I$ $a=\ \ 1.078210-0.535523I$ $b=-0.559785+0.824397I$	$4.23196-5.58061I$	0
$u=-1.73977-0.06078I$ $a=\ \ 1.078210+0.535523I$ $b=-0.559785-0.824397I$	$4.23196+5.58061I$	0
$u=-1.72168+0.58364I$ $a=\ \ 0.665295+0.437886I$ $b=-0.512093-0.805704I$	$3.95688-2.31810I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.72168-0.58364I$ $a=\ \ 0.665295-0.437886I$ $b=-0.512093+0.805704I$	$3.95688+2.31810I$	0
$u=\ \ 0.00231274$ $a=\ \ 209.301$ $b=-0.715068$	-1.80252	-6.42550

II. $\boldsymbol{I_2^u = \langle 1.26\times 10^9 u^{27} + 4.32\times 10^9 u^{26} + \cdots + 5.20\times 10^7 b + 2.15\times 10^9,\ 2.70\times 10^9 u^{27} + 9.57\times 10^9 u^{26} + \cdots + 5.20\times 10^7 a + 5.47\times 10^9,\ u^{28} + 4u^{27} + \cdots + 4u + 1\rangle}$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -51.9309u^{27} - 184.100u^{26} + \cdots - 220.692u - 105.088 \\ -24.3073u^{27} - 83.1460u^{26} + \cdots - 92.4215u - 41.4081 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 42.8138u^{27} + 140.912u^{26} + \cdots + 150.677u + 46.6348 \\ -26.2980u^{27} - 88.7752u^{26} + \cdots - 102.672u - 46.0902 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 32.8105u^{27} + 107.956u^{26} + \cdots + 132.280u + 42.8922 \\ -15.8339u^{27} - 53.7340u^{26} + \cdots - 57.3321u - 27.2856 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -42.8922u^{27} - 138.758u^{26} + \cdots - 156.936u - 38.2883 \\ 27.2856u^{27} + 93.3087u^{26} + \cdots + 107.350u + 51.8105 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 16.5158u^{27} + 52.1364u^{26} + \cdots + 48.0046u + 0.544645 \\ -26.2980u^{27} - 88.7752u^{26} + \cdots - 102.672u - 46.0902 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -5.47781u^{27} - 2.30472u^{26} + \cdots + 3.70582u + 46.6748 \\ 35.9766u^{27} + 126.222u^{26} + \cdots + 136.948u + 72.6065 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -47.0702u^{27} - 142.768u^{26} + \cdots - 144.845u - 29.3397 \\ 13.6173u^{27} + 54.0144u^{26} + \cdots + 69.4618u + 42.8226 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 34.5053u^{27} + 113.134u^{26} + \cdots + 115.058u + 25.6012 \\ -14.5819u^{27} - 49.5744u^{26} + \cdots - 61.4701u - 31.9938 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= \frac{170207324695}{1404237951}u^{27} + \frac{607236755090}{1404237951}u^{26} + \cdots + \frac{784577069311}{1404237951}u + \frac{369833604713}{1404237951}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{12}	$9(9u^{28} - 114u^{27} + \cdots - 10u + 1)$
c_2, c_5	$3(3u^{28} + 19u^{26} + \cdots - 5u^2 - 1)$
c_3, c_4	$u^{28} + 4u^{27} + \cdots + 4u + 1$
c_6	$u^{28} - 7u^{27} + \cdots - 84u + 9$
c_7, c_{11}	$3(3u^{28} + 19u^{26} + \cdots - 5u^2 - 1)$
c_8, c_{10}	$u^{28} - 4u^{27} + \cdots - 4u + 1$
c_9	$u^{28} + 7u^{27} + \cdots + 84u + 9$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$81(81y^{28} + 846y^{27} + \cdots - 10y + 1)$
c_2, c_5, c_7 c_{11}	$9(9y^{28} + 114y^{27} + \cdots + 10y + 1)$
c_3, c_4, c_8 c_{10}	$y^{28} - 22y^{27} + \cdots - 22y + 1$
c_6, c_9	$y^{28} + y^{27} + \cdots - 1908y + 81$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.925340+0.379139I$ $a=\ \ 2.24572-0.40917I$ $b=-0.809946+0.885187I$	$-7.58066I$	$0.+10.33198I$
$u=-0.925340-0.379139I$ $a=\ \ 2.24572+0.40917I$ $b=-0.809946-0.885187I$	$7.58066I$	$0.-10.33198I$
$u=\ \ 0.844355+0.535785I$ $a=\ \ 0.319916-0.032322I$ $b=-0.033307-0.876029I$	$2.17293I$	$0.-5.17447I$
$u=\ \ 0.844355-0.535785I$ $a=\ \ 0.319916+0.032322I$ $b=-0.033307+0.876029I$	$-2.17293I$	$0.+5.17447I$
$u=-0.728147+0.685421I$ $a=\ \ 0.356352-1.017430I$ $b=-0.227445-0.872245I$	$-0.753054I$	$-60.10-0.363725I$
$u=-0.728147-0.685421I$ $a=\ \ 0.356352+1.017430I$ $b=-0.227445+0.872245I$	$0.753054I$	$-60.10+0.363725I$
$u=\ \ 0.826005$ $a=-0.646246$ $b=\ \ 0.825758$	-0.795110	2.56130
$u=\ \ 1.21065$ $a=\ \ 1.20132$ $b=-0.511759$	0.795110	-2.56130
$u=\ \ 0.605990+0.367273I$ $a=\ \ 2.09549-1.67335I$ $b=\ \ 0.283299-0.701338I$	$-3.27979-0.15002I$	$-5.84561-1.06967I$
$u=\ \ 0.605990-0.367273I$ $a=\ \ 2.09549+1.67335I$ $b=\ \ 0.283299+0.701338I$	$-3.27979+0.15002I$	$-5.84561+1.06967I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.546660+0.443958I$ $a=-1.28161-2.65989I$ $b=-0.291085-0.754240I$	$-2.81546-5.07259I$	$-5.64758+6.26669I$
$u=-0.546660-0.443958I$ $a=-1.28161+2.65989I$ $b=-0.291085+0.754240I$	$-2.81546+5.07259I$	$-5.64758-6.26669I$
$u=-0.627660+0.076465I$ $a=-1.40062-1.26509I$ $b=\ \ 0.485796-1.141260I$	$-3.87899-4.58805I$	$-0.29140+2.17955I$
$u=-0.627660-0.076465I$ $a=-1.40062+1.26509I$ $b=\ \ 0.485796+1.141260I$	$-3.87899+4.58805I$	$-0.29140-2.17955I$
$u=\ \ 0.529489+0.285554I$ $a=-1.66299-0.60648I$ $b=-0.362232-1.037760I$	$-3.94178+7.86870I$	$-4.53132-9.27167I$
$u=\ \ 0.529489-0.285554I$ $a=-1.66299+0.60648I$ $b=-0.362232+1.037760I$	$-3.94178-7.86870I$	$-4.53132+9.27167I$
$u=\ \ 1.206880+0.731454I$ $a=\ \ 0.756249-0.625801I$ $b=-0.689582+0.782871I$	$3.27979-0.15002I$	$5.84561+0.I$
$u=\ \ 1.206880-0.731454I$ $a=\ \ 0.756249+0.625801I$ $b=-0.689582-0.782871I$	$3.27979+0.15002I$	$5.84561+0.I$
$u=-1.10228+0.89519I$ $a=\ \ 1.60224+0.39206I$ $b=-0.662551+0.931523I$	$2.81546-5.07259I$	$5.64758+6.26669I$
$u=-1.10228-0.89519I$ $a=\ \ 1.60224-0.39206I$ $b=-0.662551-0.931523I$	$2.81546+5.07259I$	$5.64758-6.26669I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.534384+0.203784I$ $a=\ 1.06373-1.92237I$ $b=\ 0.404020-1.060990I$	$-4.75033-2.85360I$	$-8.46799+4.45694I$
$u=-0.534384-0.203784I$ $a=\ 1.06373+1.92237I$ $b=\ 0.404020+1.060990I$	$-4.75033+2.85360I$	$-8.46799-4.45694I$
$u=-1.56992+0.19126I$ $a=-1.052710+0.222195I$ $b=\ 0.471169-0.568839I$	$3.87899-4.58805I$	0
$u=-1.56992-0.19126I$ $a=-1.052710-0.222195I$ $b=\ 0.471169+0.568839I$	$3.87899+4.58805I$	0
$u=\ 1.46308+0.78904I$ $a=-1.42485+0.13099I$ $b=\ 0.640338+0.976825I$	$3.94178+7.86870I$	0
$u=\ 1.46308-0.78904I$ $a=-1.42485-0.13099I$ $b=\ 0.640338-0.976825I$	$3.94178-7.86870I$	0
$u=-1.63373+0.62301I$ $a=-0.894451-0.389690I$ $b=\ 0.634525+0.722910I$	$4.75033-2.85360I$	0
$u=-1.63373-0.62301I$ $a=-0.894451+0.389690I$ $b=\ 0.634525-0.722910I$	$4.75033+2.85360I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$81(9u^{28}-114u^{27}+\cdots-10u+1)$ $\cdot(9u^{142}+519u^{141}+\cdots+57707u+5329)$
c_2	$9(3u^{28}+19u^{26}+\cdots-5u^2-1)(3u^{142}+3u^{141}+\cdots+359u-73)$
c_3	$(u^{28}+4u^{27}+\cdots+4u+1)(u^{142}+u^{141}+\cdots-907109u+2099)$
c_4	$(u^{28}+4u^{27}+\cdots+4u+1)(u^{142}-u^{141}+\cdots+907109u+2099)$
c_5	$9(3u^{28}+19u^{26}+\cdots-5u^2-1)(3u^{142}-3u^{141}+\cdots-359u-73)$
c_6	$(u^{28}-7u^{27}+\cdots-84u+9)$ $\cdot(u^{142}-4u^{141}+\cdots+76091739u-4428063)$
c_7	$9(3u^{28}+19u^{26}+\cdots-5u^2-1)(3u^{142}+3u^{141}+\cdots+359u-73)$
c_8	$(u^{28}-4u^{27}+\cdots-4u+1)(u^{142}-u^{141}+\cdots+907109u+2099)$
c_9	$(u^{28}+7u^{27}+\cdots+84u+9)$ $\cdot(u^{142}+4u^{141}+\cdots-76091739u-4428063)$
c_{10}	$(u^{28}-4u^{27}+\cdots-4u+1)(u^{142}+u^{141}+\cdots-907109u+2099)$
c_{11}	$9(3u^{28}+19u^{26}+\cdots-5u^2-1)(3u^{142}-3u^{141}+\cdots-359u-73)$
c_{12}	$81(9u^{28}-114u^{27}+\cdots-10u+1)$ $\cdot(9u^{142}-519u^{141}+\cdots-57707u+5329)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$6561(81y^{28}+846y^{27}+\cdots-10y+1)$ $\cdot(81y^{142}+6327y^{141}+\cdots-2560163929y+28398241)$
c_2, c_5, c_7 c_{11}	$81(9y^{28}+114y^{27}+\cdots+10y+1)$ $\cdot(9y^{142}+519y^{141}+\cdots+57707y+5329)$
c_3, c_4, c_8 c_{10}	$(y^{28}-22y^{27}+\cdots-22y+1)$ $\cdot(y^{142}-93y^{141}+\cdots-823753833325y+4405801)$
c_6, c_9	$(y^{28}+y^{27}+\cdots-1908y+81)$ $\cdot(y^{142}-26y^{141}+\cdots-783996286987719y+19607741931969)$