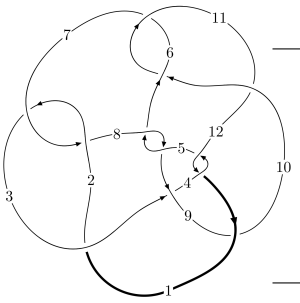
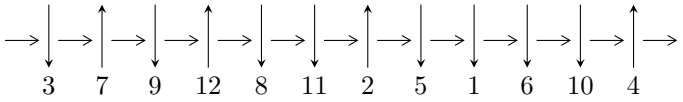
$12a_{0604}$ $(K12a_{0604})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 1.06975 \times 10^{546} u^{142} - 7.77145 \times 10^{546} u^{141} + \cdots + 3.41807 \times 10^{543} b + 1.40078 \times 10^{548}, \\ & - 2.07944 \times 10^{545} u^{142} + 2.80717 \times 10^{546} u^{141} + \cdots + 3.41807 \times 10^{543} a - 2.16578 \times 10^{548}, \\ & u^{143} - 7u^{142} + \cdots + 3881u - 121 \rangle \\ I_2^u = \langle & 1318285860373840 u^{31} - 1436322685985714 u^{30} + \cdots + 173990609655301 b - 3641781170576400, \\ & 3863358201022951 u^{31} + 4701671484443780 u^{30} + \cdots + 173990609655301 a + 5565697109234501, \\ & u^{32} + 12u^{30} + \cdots + u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 175 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. $\boldsymbol{I_1^u = \langle 1.07 \times 10^{546} u^{142} - 7.77 \times 10^{546} u^{141} + \cdots + 3.42 \times 10^{543} b + 1.40 \times 10^{548},\ -2.08 \times 10^{545} u^{142} + 2.81 \times 10^{546} u^{141} + \cdots + 3.42 \times 10^{543} a - 2.17 \times 10^{548},\ u^{143} - 7u^{142} + \cdots + 3881u - 121 \rangle}$

(i) Arc colorings

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

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

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

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

$$a_9 = \begin{pmatrix} 60.8368u^{142} - 821.273u^{141} + \cdots - 1.99321 \times 10^6 u + 63362.7 \\ -312.970u^{142} + 2273.64u^{141} + \cdots + 1.32948 \times 10^6 u - 40981.7 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -213.444u^{142} + 1205.05u^{141} + \cdots - 671828.u + 22460.4 \\ -295.721u^{142} + 2356.12u^{141} + \cdots + 2.20490 \times 10^6 u - 69014.7 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -163.545u^{142} + 1035.16u^{141} + \cdots - 46634.6u + 2256.25 \\ 18.3757u^{142} - 24.5616u^{141} + \cdots + 427470.u - 13730.8 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 152.700u^{142} - 1154.18u^{141} + \cdots - 833158.u + 25921.2 \\ -162.336u^{142} + 1098.28u^{141} + \cdots + 315472.u - 9312.22 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -252.134u^{142} + 1452.37u^{141} + \cdots - 663723.u + 22381.0 \\ -312.970u^{142} + 2273.64u^{141} + \cdots + 1.32948 \times 10^6 u - 40981.7 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -347.409u^{142} + 2438.03u^{141} + \cdots + 1.10062 \times 10^6 u - 33534.6 \\ 254.951u^{142} - 1425.93u^{141} + \cdots + 867942.u - 28929.3 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -288.174u^{142} + 1769.85u^{141} + \cdots - 249787.u + 9322.75 \\ -146.578u^{142} + 1355.32u^{141} + \cdots + 1.95952 \times 10^6 u - 61910.5 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -250.569u^{142} + 1674.41u^{141} + \cdots + 402308.u - 11699.0 \\ 278.552u^{142} - 1552.32u^{141} + \cdots + 970880.u - 32344.9 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -160.761u^{142} - 47.4725u^{141} + \cdots - 4.91048 \times 10^6 u + 157668.$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{143} + 55u^{142} + \cdots - 53u - 1$
c_2, c_7	$u^{143} + u^{142} + \cdots - 5u + 1$
c_3	$u^{143} + u^{142} + \cdots + 10u + 3$
c_4, c_{12}	$u^{143} + 7u^{142} + \cdots + 3881u + 121$
c_5, c_8	$u^{143} - 3u^{142} + \cdots - 2753876u + 594031$
c_6, c_{10}	$u^{143} - u^{142} + \cdots - 1618u + 253$
c_9	$u^{143} - 3u^{142} + \cdots - 48u + 1$
c_{11}	$u^{143} + 57u^{142} + \cdots + 375838u + 64009$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{143} + 79y^{142} + \cdots - 1165y - 1$
c_2, c_7	$y^{143} + 55y^{142} + \cdots - 53y - 1$
c_3	$y^{143} + 7y^{142} + \cdots - 338y - 9$
c_4, c_{12}	$y^{143} + 87y^{142} + \cdots + 8076105y - 14641$
c_5, c_8	$y^{143} + 109y^{142} + \cdots - 10735503242368y - 352872828961$
c_6, c_{10}	$y^{143} - 57y^{142} + \cdots + 375838y - 64009$
c_9	$y^{143} - y^{142} + \cdots + 32y - 1$
c_{11}	$y^{143} + 75y^{142} + \cdots - 771783103574y - 4097152081$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.409876+0.894319I$ $a=\ \ 2.20658+0.13329I$ $b=-0.588263-0.919080I$	$-0.10925-4.11451I$	0
$u=-0.409876-0.894319I$ $a=\ \ 2.20658-0.13329I$ $b=-0.588263+0.919080I$	$-0.10925+4.11451I$	0
$u=\ \ 0.338063+0.961942I$ $a=-2.80753+0.27646I$ $b=\ \ 0.011443-1.236700I$	$4.47686+5.62073I$	0
$u=\ \ 0.338063-0.961942I$ $a=-2.80753-0.27646I$ $b=\ \ 0.011443+1.236700I$	$4.47686-5.62073I$	0
$u=-0.406563+0.891523I$ $a=\ \ 0.412746+0.380192I$ $b=\ \ 0.046954+0.283956I$	$0.54871-1.77979I$	0
$u=-0.406563-0.891523I$ $a=\ \ 0.412746-0.380192I$ $b=\ \ 0.046954-0.283956I$	$0.54871+1.77979I$	0
$u=\ \ 0.284513+0.922029I$ $a=-1.78615-1.23934I$ $b=\ \ 0.254594-1.355680I$	$3.06352+4.33431I$	0
$u=\ \ 0.284513-0.922029I$ $a=-1.78615+1.23934I$ $b=\ \ 0.254594+1.355680I$	$3.06352-4.33431I$	0
$u=-0.353741+0.973035I$ $a=\ \ 2.62946+0.61940I$ $b=\ \ 0.074561-1.100870I$	$4.19716-0.40417I$	0
$u=-0.353741-0.973035I$ $a=\ \ 2.62946-0.61940I$ $b=\ \ 0.074561+1.100870I$	$4.19716+0.40417I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.272760+0.921244I$ $a=\ \ 1.30511-1.77902I$ $b=-0.288482-1.278600I$	$1.96931-9.26844I$	0
$u=-0.272760-0.921244I$ $a=\ \ 1.30511+1.77902I$ $b=-0.288482+1.278600I$	$1.96931+9.26844I$	0
$u=-0.260158+0.907594I$ $a=\ \ 0.180844-0.696566I$ $b=\ \ 0.016534-1.256220I$	$-1.11429-3.32399I$	0
$u=-0.260158-0.907594I$ $a=\ \ 0.180844+0.696566I$ $b=\ \ 0.016534+1.256220I$	$-1.11429+3.32399I$	0
$u=\ \ 0.312150+0.889695I$ $a=-1.76098-0.06289I$ $b=\ \ 0.30351-1.41900I$	$2.42259+4.44141I$	0
$u=\ \ 0.312150-0.889695I$ $a=-1.76098+0.06289I$ $b=\ \ 0.30351+1.41900I$	$2.42259-4.44141I$	0
$u=\ \ 1.069750+0.080254I$ $a=\ \ 0.051692-0.443330I$ $b=-0.347228-0.619341I$	$-2.76889+1.32129I$	0
$u=\ \ 1.069750-0.080254I$ $a=\ \ 0.051692+0.443330I$ $b=-0.347228+0.619341I$	$-2.76889-1.32129I$	0
$u=-0.292145+0.870590I$ $a=-2.15870-1.12139I$ $b=\ \ 0.84953+1.44858I$	$4.01603-3.90298I$	0
$u=-0.292145-0.870590I$ $a=-2.15870+1.12139I$ $b=\ \ 0.84953-1.44858I$	$4.01603+3.90298I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.055650 + 0.239163I$ $a = -0.123255 + 0.371934I$ $b = 0.39225 + 1.40040I$	$7.10510 - 7.25153I$	0
$u = 1.055650 - 0.239163I$ $a = -0.123255 - 0.371934I$ $b = 0.39225 - 1.40040I$	$7.10510 + 7.25153I$	0
$u = -0.390050 + 0.824416I$ $a = 2.45071 + 0.42463I$ $b = -1.02637 - 1.33643I$	$3.17089 - 9.43341I$	0
$u = -0.390050 - 0.824416I$ $a = 2.45071 - 0.42463I$ $b = -1.02637 + 1.33643I$	$3.17089 + 9.43341I$	0
$u = 0.320924 + 0.849210I$ $a = -0.988475 - 0.694161I$ $b = 0.606579 - 0.303759I$	$-2.00670 + 0.77075I$	0
$u = 0.320924 - 0.849210I$ $a = -0.988475 + 0.694161I$ $b = 0.606579 + 0.303759I$	$-2.00670 - 0.77075I$	0
$u = 0.315249 + 0.848930I$ $a = 1.96950 - 1.13587I$ $b = -0.59718 + 1.58798I$	$4.60476 - 1.50789I$	0
$u = 0.315249 - 0.848930I$ $a = 1.96950 + 1.13587I$ $b = -0.59718 - 1.58798I$	$4.60476 + 1.50789I$	0
$u = 0.364690 + 0.825608I$ $a = -2.27109 + 0.55935I$ $b = 0.85536 - 1.50734I$	$4.07252 + 4.30234I$	0
$u = 0.364690 - 0.825608I$ $a = -2.27109 - 0.55935I$ $b = 0.85536 + 1.50734I$	$4.07252 - 4.30234I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.878292 + 0.182741I$ $a = 0.481164 + 0.015312I$ $b = -0.133818 + 1.198810I$	$0.47134 + 5.51955I$	0
$u = 0.878292 - 0.182741I$ $a = 0.481164 - 0.015312I$ $b = -0.133818 - 1.198810I$	$0.47134 - 5.51955I$	0
$u = -0.203253 + 0.866437I$ $a = -0.123173 + 1.053840I$ $b = 0.43068 - 1.87863I$	$4.24284 + 1.56767I$	0
$u = -0.203253 - 0.866437I$ $a = -0.123173 - 1.053840I$ $b = 0.43068 + 1.87863I$	$4.24284 - 1.56767I$	0
$u = -0.438231 + 0.769882I$ $a = -0.042539 - 0.958749I$ $b = -0.60561 + 1.59204I$	$3.30529 + 5.86418I$	0
$u = -0.438231 - 0.769882I$ $a = -0.042539 + 0.958749I$ $b = -0.60561 - 1.59204I$	$3.30529 - 5.86418I$	0
$u = -0.165810 + 1.108060I$ $a = -1.43463 + 0.11979I$ $b = 0.858673 - 0.500804I$	$-3.94404 - 0.75957I$	0
$u = -0.165810 - 1.108060I$ $a = -1.43463 - 0.11979I$ $b = 0.858673 + 0.500804I$	$-3.94404 + 0.75957I$	0
$u = 0.413134 + 0.775606I$ $a = 0.483800 - 0.990728I$ $b = 0.39448 + 1.69283I$	$4.18272 - 0.89273I$	0
$u = 0.413134 - 0.775606I$ $a = 0.483800 + 0.990728I$ $b = 0.39448 - 1.69283I$	$4.18272 + 0.89273I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.437260+1.033550I$ $a=\ \ 1.326170-0.096997I$ $b=-0.508390-0.296696I$	$-0.50485-2.73778I$	0
$u=-0.437260-1.033550I$ $a=\ \ 1.326170+0.096997I$ $b=-0.508390+0.296696I$	$-0.50485+2.73778I$	0
$u=\ \ 0.226363+0.846555I$ $a=-0.415887+1.046790I$ $b=-0.15116-1.92497I$	$4.79803+4.07547I$	0
$u=\ \ 0.226363-0.846555I$ $a=-0.415887-1.046790I$ $b=-0.15116+1.92497I$	$4.79803-4.07547I$	0
$u=\ \ 0.241324+1.104080I$ $a=\ \ 1.59405+0.22801I$ $b=-0.816497-0.473422I$	$-6.21474+5.59156I$	0
$u=\ \ 0.241324-1.104080I$ $a=\ \ 1.59405-0.22801I$ $b=-0.816497+0.473422I$	$-6.21474-5.59156I$	0
$u=-0.837615+0.206861I$ $a=-0.362293-0.200136I$ $b=-0.133056+1.095170I$	$1.57710-0.73419I$	0
$u=-0.837615-0.206861I$ $a=-0.362293+0.200136I$ $b=-0.133056-1.095170I$	$1.57710+0.73419I$	0
$u=-1.134430+0.269030I$ $a=\ \ 0.078144+0.348563I$ $b=-0.244671+1.380900I$	$8.39956+0.86716I$	0
$u=-1.134430-0.269030I$ $a=\ \ 0.078144-0.348563I$ $b=-0.244671-1.380900I$	$8.39956-0.86716I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.471275+0.687427I$ $a=\ \ 0.132408+0.088818I$ $b=-0.375328+1.153630I$	$0.501240+0.405728I$	0
$u=-0.471275-0.687427I$ $a=\ \ 0.132408-0.088818I$ $b=-0.375328-1.153630I$	$0.501240-0.405728I$	0
$u=-0.245496+0.793886I$ $a=-2.43593-0.88383I$ $b=\ \ 0.261695+0.827557I$	$-0.754882+0.908230I$	0
$u=-0.245496-0.793886I$ $a=-2.43593+0.88383I$ $b=\ \ 0.261695-0.827557I$	$-0.754882-0.908230I$	0
$u=\ \ 0.545388+1.040330I$ $a=-1.49961-0.44283I$ $b=\ \ 0.526297-0.666540I$	$-2.64163+6.12911I$	0
$u=\ \ 0.545388-1.040330I$ $a=-1.49961+0.44283I$ $b=\ \ 0.526297+0.666540I$	$-2.64163-6.12911I$	0
$u=-0.228969+0.771382I$ $a=-3.32165-0.26537I$ $b=-0.237562+0.919528I$	$2.50374+6.83691I$	0
$u=-0.228969-0.771382I$ $a=-3.32165+0.26537I$ $b=-0.237562-0.919528I$	$2.50374-6.83691I$	0
$u=\ \ 0.317671+0.731649I$ $a=\ \ 1.45560-0.01577I$ $b=\ \ 0.074825+1.341700I$	$2.88396-1.52502I$	0
$u=\ \ 0.317671-0.731649I$ $a=\ \ 1.45560+0.01577I$ $b=\ \ 0.074825-1.341700I$	$2.88396+1.52502I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.359409 + 1.147820I$ $a = -0.945598 - 0.607175I$ $b = 0.859936 + 0.394641I$	$-4.22663 + 1.45748I$	0
$u = 0.359409 - 1.147820I$ $a = -0.945598 + 0.607175I$ $b = 0.859936 - 0.394641I$	$-4.22663 - 1.45748I$	0
$u = -0.722483 + 0.322293I$ $a = 0.195765 - 0.150846I$ $b = 0.062615 + 0.675116I$	$1.33826 - 1.49611I$	0
$u = -0.722483 - 0.322293I$ $a = 0.195765 + 0.150846I$ $b = 0.062615 - 0.675116I$	$1.33826 + 1.49611I$	0
$u = 0.236460 + 0.751511I$ $a = 2.87982 + 0.20790I$ $b = 0.186719 + 1.083700I$	$3.65906 - 1.80529I$	0
$u = 0.236460 - 0.751511I$ $a = 2.87982 - 0.20790I$ $b = 0.186719 - 1.083700I$	$3.65906 + 1.80529I$	0
$u = 1.196870 + 0.202223I$ $a = 0.063492 - 0.262345I$ $b = -0.50768 - 1.33425I$	$5.4176 - 13.1343I$	0
$u = 1.196870 - 0.202223I$ $a = 0.063492 + 0.262345I$ $b = -0.50768 + 1.33425I$	$5.4176 + 13.1343I$	0
$u = 0.231177 + 1.200910I$ $a = -0.763193 - 0.537484I$ $b = 0.686748 - 0.276936I$	$-2.00485 + 1.03914I$	0
$u = 0.231177 - 1.200910I$ $a = -0.763193 + 0.537484I$ $b = 0.686748 + 0.276936I$	$-2.00485 - 1.03914I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.482963+1.137540I$ $a=\ \ 1.55705-0.28439I$ $b=-1.229440-0.480521I$	$-0.52541-1.98449I$	0
$u=-0.482963-1.137540I$ $a=\ \ 1.55705+0.28439I$ $b=-1.229440+0.480521I$	$-0.52541+1.98449I$	0
$u=\ \ 0.456095+1.154010I$ $a=-1.52828-0.52113I$ $b=\ \ 1.346250-0.170329I$	$-1.19682+6.81038I$	0
$u=\ \ 0.456095-1.154010I$ $a=-1.52828+0.52113I$ $b=\ \ 1.346250+0.170329I$	$-1.19682-6.81038I$	0
$u=-0.568756+1.104000I$ $a=\ \ 1.150150+0.071404I$ $b=-0.692463-0.862627I$	$-0.99003-4.39494I$	0
$u=-0.568756-1.104000I$ $a=\ \ 1.150150-0.071404I$ $b=-0.692463+0.862627I$	$-0.99003+4.39494I$	0
$u=-0.740280+0.136855I$ $a=-0.129954-0.652074I$ $b=-0.809719+0.541019I$	$2.33926-2.49575I$	0
$u=-0.740280-0.136855I$ $a=-0.129954+0.652074I$ $b=-0.809719-0.541019I$	$2.33926+2.49575I$	0
$u=\ \ 0.180699+1.244330I$ $a=\ \ 1.168970+0.372629I$ $b=-0.861147-0.548494I$	$-8.49099-1.77052I$	0
$u=\ \ 0.180699-1.244330I$ $a=\ \ 1.168970-0.372629I$ $b=-0.861147+0.548494I$	$-8.49099+1.77052I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.735777 + 0.089718I$ $a = -0.242530 - 1.024610I$ $b = -0.910243 + 0.037611I$	$1.25246 + 7.91091I$	0
$u = 0.735777 - 0.089718I$ $a = -0.242530 + 1.024610I$ $b = -0.910243 - 0.037611I$	$1.25246 - 7.91091I$	0
$u = 0.718723 + 0.090281I$ $a = 0.061850 - 0.700454I$ $b = 0.941468 + 0.264534I$	$1.86135 - 2.50434I$	0
$u = 0.718723 - 0.090281I$ $a = 0.061850 + 0.700454I$ $b = 0.941468 - 0.264534I$	$1.86135 + 2.50434I$	0
$u = -0.701316 + 0.148407I$ $a = 0.443240 - 0.848281I$ $b = 0.703410 + 0.256407I$	$2.50110 - 2.58298I$	0
$u = -0.701316 - 0.148407I$ $a = 0.443240 + 0.848281I$ $b = 0.703410 - 0.256407I$	$2.50110 + 2.58298I$	0
$u = 0.656972 + 1.106080I$ $a = -1.324180 - 0.360830I$ $b = 0.378346 - 0.943016I$	$-2.53310 + 6.18641I$	0
$u = 0.656972 - 1.106080I$ $a = -1.324180 + 0.360830I$ $b = 0.378346 + 0.943016I$	$-2.53310 - 6.18641I$	0
$u = 0.432135 + 1.221640I$ $a = 1.43229 + 0.50481I$ $b = -1.51857 - 0.09633I$	$-2.49900 + 12.11870I$	0
$u = 0.432135 - 1.221640I$ $a = 1.43229 - 0.50481I$ $b = -1.51857 + 0.09633I$	$-2.49900 - 12.11870I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.416300+1.229830I$ $a=-1.42393+0.27587I$ $b=\ \ 1.404400+0.127993I$	$-1.41094-6.61756I$	0
$u=-0.416300-1.229830I$ $a=-1.42393-0.27587I$ $b=\ \ 1.404400-0.127993I$	$-1.41094+6.61756I$	0
$u=-1.285780+0.195513I$ $a=-0.017977-0.267704I$ $b=\ \ 0.376873-1.322230I$	$7.20653+6.59098I$	0
$u=-1.285780-0.195513I$ $a=-0.017977+0.267704I$ $b=\ \ 0.376873+1.322230I$	$7.20653-6.59098I$	0
$u=\ \ 0.082506+1.315580I$ $a=-0.126343-0.779054I$ $b=\ \ 0.206134+1.137020I$	$0.87338-2.99536I$	0
$u=\ \ 0.082506-1.315580I$ $a=-0.126343+0.779054I$ $b=\ \ 0.206134-1.137020I$	$0.87338+2.99536I$	0
$u=\ \ 0.406803+1.270930I$ $a=\ \ 1.67597-0.65720I$ $b=-0.383760+1.160540I$	$-3.91344+9.88644I$	0
$u=\ \ 0.406803-1.270930I$ $a=\ \ 1.67597+0.65720I$ $b=-0.383760-1.160540I$	$-3.91344-9.88644I$	0
$u=-0.401008+1.276640I$ $a=-1.36491-0.77324I$ $b=\ \ 0.249487+0.986213I$	$-2.87317-4.98544I$	0
$u=-0.401008-1.276640I$ $a=-1.36491+0.77324I$ $b=\ \ 0.249487-0.986213I$	$-2.87317+4.98544I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.342743+1.299600I$ $a=\ \ 0.044467-0.667510I$ $b=-0.377248+0.026425I$	$-1.92600-6.31263I$	0
$u=-0.342743-1.299600I$ $a=\ \ 0.044467+0.667510I$ $b=-0.377248-0.026425I$	$-1.92600+6.31263I$	0
$u=-0.398657+1.284730I$ $a=-1.115220-0.325759I$ $b=\ \ 0.620838+0.618962I$	$-3.34285-5.46853I$	0
$u=-0.398657-1.284730I$ $a=-1.115220+0.325759I$ $b=\ \ 0.620838-0.618962I$	$-3.34285+5.46853I$	0
$u=\ \ 0.456938+1.266740I$ $a=\ \ 0.776209+0.443984I$ $b=-0.865885-0.374996I$	$-6.95043+6.21889I$	0
$u=\ \ 0.456938-1.266740I$ $a=\ \ 0.776209-0.443984I$ $b=-0.865885+0.374996I$	$-6.95043-6.21889I$	0
$u=\ \ 0.434959+1.285620I$ $a=\ \ 1.43122-0.08980I$ $b=-0.659534+1.021300I$	$-7.05884+3.76976I$	0
$u=\ \ 0.434959-1.285620I$ $a=\ \ 1.43122+0.08980I$ $b=-0.659534-1.021300I$	$-7.05884-3.76976I$	0
$u=\ \ 0.575430+0.266975I$ $a=-0.037897+0.468895I$ $b=\ \ 0.433601+0.536034I$	$-0.59991-1.65353I$	0
$u=\ \ 0.575430-0.266975I$ $a=-0.037897-0.468895I$ $b=\ \ 0.433601-0.536034I$	$-0.59991+1.65353I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.640001 + 1.207760I$ $a = 0.559577 + 0.506420I$ $b = -0.563314 + 0.742476I$	$-1.56642 - 3.03874I$	0
$u = 0.640001 - 1.207760I$ $a = 0.559577 - 0.506420I$ $b = -0.563314 - 0.742476I$	$-1.56642 + 3.03874I$	0
$u = 0.600167 + 1.253790I$ $a = -1.66359 + 0.14533I$ $b = 0.53376 - 1.44823I$	$3.92573 + 13.13200I$	0
$u = 0.600167 - 1.253790I$ $a = -1.66359 - 0.14533I$ $b = 0.53376 + 1.44823I$	$3.92573 - 13.13200I$	0
$u = -0.625862 + 1.258890I$ $a = 1.50855 + 0.17248I$ $b = -0.41626 - 1.41135I$	$5.26206 - 7.02890I$	0
$u = -0.625862 - 1.258890I$ $a = 1.50855 - 0.17248I$ $b = -0.41626 + 1.41135I$	$5.26206 + 7.02890I$	0
$u = 1.20516 + 0.78491I$ $a = -0.256023 - 0.419927I$ $b = -0.208482 - 0.982709I$	$-1.91798 - 3.89604I$	0
$u = 1.20516 - 0.78491I$ $a = -0.256023 + 0.419927I$ $b = -0.208482 + 0.982709I$	$-1.91798 + 3.89604I$	0
$u = 0.196974 + 0.514065I$ $a = 0.21440 + 2.38937I$ $b = 0.034405 + 1.403400I$	$5.76837 - 2.72073I$	0
$u = 0.196974 - 0.514065I$ $a = 0.21440 - 2.38937I$ $b = 0.034405 - 1.403400I$	$5.76837 + 2.72073I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.63774 + 1.31072I$ $a = 1.53924 - 0.09161I$ $b = -0.66789 + 1.46266I$	$1.9240 + 19.5341I$	0
$u = 0.63774 - 1.31072I$ $a = 1.53924 + 0.09161I$ $b = -0.66789 - 1.46266I$	$1.9240 - 19.5341I$	0
$u = 0.72419 + 1.26731I$ $a = 1.180070 + 0.220824I$ $b = -0.459596 + 1.206970I$	$-4.17506 + 11.02990I$	0
$u = 0.72419 - 1.26731I$ $a = 1.180070 - 0.220824I$ $b = -0.459596 - 1.206970I$	$-4.17506 - 11.02990I$	0
$u = -0.65578 + 1.32482I$ $a = -1.400500 - 0.122714I$ $b = 0.56364 + 1.46038I$	$3.63866 - 13.25200I$	0
$u = -0.65578 - 1.32482I$ $a = -1.400500 + 0.122714I$ $b = 0.56364 - 1.46038I$	$3.63866 + 13.25200I$	0
$u = 1.08751 + 1.00446I$ $a = 0.352079 + 0.436032I$ $b = -0.050799 + 1.070720I$	$-1.52156 + 0.34717I$	0
$u = 1.08751 - 1.00446I$ $a = 0.352079 - 0.436032I$ $b = -0.050799 - 1.070720I$	$-1.52156 - 0.34717I$	0
$u = 0.69981 + 1.33953I$ $a = -0.298017 + 0.249932I$ $b = 0.068402 - 0.830064I$	$-2.56190 + 0.14422I$	0
$u = 0.69981 - 1.33953I$ $a = -0.298017 - 0.249932I$ $b = 0.068402 + 0.830064I$	$-2.56190 - 0.14422I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.90424+1.22717I$ $a=\ \ 0.757080-0.103344I$ $b=-0.014427-1.094330I$	$2.49620-1.93857I$	0
$u=-0.90424-1.22717I$ $a=\ \ 0.757080+0.103344I$ $b=-0.014427+1.094330I$	$2.49620+1.93857I$	0
$u=-0.243710+0.390674I$ $a=\ \ 0.89579+2.15684I$ $b=\ \ 0.100698+1.384360I$	$5.68760-2.65348I$	0
$u=-0.243710-0.390674I$ $a=\ \ 0.89579-2.15684I$ $b=\ \ 0.100698-1.384360I$	$5.68760+2.65348I$	0
$u=\ \ 0.282821+0.252122I$ $a=\ \ 1.97455-1.43823I$ $b=-0.529064-0.085417I$	$-3.68479-3.43622I$	$-13.0881+5.6130I$
$u=\ \ 0.282821-0.252122I$ $a=\ \ 1.97455+1.43823I$ $b=-0.529064+0.085417I$	$-3.68479+3.43622I$	$-13.0881-5.6130I$
$u=-0.89403+1.38947I$ $a=-0.696598+0.049512I$ $b=\ \ 0.178143+1.252320I$	$2.20239-6.88117I$	0
$u=-0.89403-1.38947I$ $a=-0.696598-0.049512I$ $b=\ \ 0.178143-1.252320I$	$2.20239+6.88117I$	0
$u=-0.49358+1.57840I$ $a=-0.564919-0.182390I$ $b=\ \ 0.491350+1.069500I$	$0.15945-3.37795I$	0
$u=-0.49358-1.57840I$ $a=-0.564919+0.182390I$ $b=\ \ 0.491350-1.069500I$	$0.15945+3.37795I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.01391+1.90024I$ $a=\ \ 0.175776+0.240003I$ $b=-0.343885-0.832877I$	$-1.49379-6.94000I$	0
$u=-0.01391-1.90024I$ $a=\ \ 0.175776-0.240003I$ $b=-0.343885+0.832877I$	$-1.49379+6.94000I$	0
$u=\ \ 0.0410644$ $a=\ \ 13.9495$ $b=\ \ 0.475715$	-1.11541	-9.18970

II.

$\boldsymbol{I_2^u = \langle 1.32\times 10^{15}u^{31} - 1.44\times 10^{15}u^{30} + \cdots + 1.74\times 10^{14}b - 3.64\times 10^{15},\ 3.86\times 10^{15}u^{31} + 4.70\times 10^{15}u^{30} + \cdots + 1.74\times 10^{14}a + 5.57\times 10^{15},\ u^{32} + 12u^{30} + \cdots + u + 1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_9 = \begin{pmatrix} -22.2044u^{31} - 27.0226u^{30} + \cdots - 82.7795u - 31.9885 \\ -7.57676u^{31} + 8.25517u^{30} + \cdots + 20.9332u + 20.9309 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -23.9645u^{31} - 19.3118u^{30} + \cdots - 60.3591u - 15.6485 \\ -4.78512u^{31} + 14.1490u^{30} + \cdots + 37.4030u + 29.5601 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 4.17572u^{31} - 10.7882u^{30} + \cdots + 10.9108u - 10.7176 \\ -u^{30} - 11u^{28} + \cdots - 13u^2 - u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -5.84615u^{31} - 7.99209u^{30} + \cdots - 11.4592u - 11.8864 \\ 1.20910u^{31} + 0.211125u^{30} + \cdots + 4.82395u + 1.86061 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -29.7812u^{31} - 18.7674u^{30} + \cdots - 61.8463u - 11.0576 \\ -7.57676u^{31} + 8.25517u^{30} + \cdots + 20.9332u + 20.9309 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -17.9894u^{31} + 1.07993u^{30} + \cdots - 32.2027u + 7.83473 \\ 6.90542u^{31} + 4.92672u^{30} + \cdots + 29.7416u + 3.84679 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -53.1412u^{31} + 6.43759u^{30} + \cdots - 38.3877u + 30.4021 \\ -8.53271u^{31} + 17.5380u^{30} + \cdots + 33.7148u + 25.3631 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3.36852u^{31} - 4.41806u^{30} + \cdots - 0.241384u - 2.69627 \\ 3.87158u^{31} + 12.9957u^{30} + \cdots + 42.2939u + 26.6186 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= -\frac{664759526927211}{173990609655301}u^{31} - \frac{122349895792680}{173990609655301}u^{30} + \cdots + \frac{1458028469222772}{173990609655301}u + \frac{317711536962977}{173990609655301}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} - 16u^{31} + \cdots - 17u + 1$
c_2	$u^{32} + 8u^{30} + \cdots + u + 1$
c_3	$u^{32} + 2u^{30} + \cdots + 4u + 1$
c_4	$u^{32} + 12u^{30} + \cdots + u + 1$
c_5	$u^{32} - 2u^{31} + \cdots + 10u^2 + 1$
c_6	$u^{32} - 8u^{30} + \cdots - 2u + 1$
c_7	$u^{32} + 8u^{30} + \cdots - u + 1$
c_8	$u^{32} + 2u^{31} + \cdots + 10u^2 + 1$
c_9	$u^{32} - 6u^{31} + \cdots + 2u^2 + 1$
c_{10}	$u^{32} - 8u^{30} + \cdots + 2u + 1$
c_{11}	$u^{32} + 16u^{31} + \cdots + 18u + 1$
c_{12}	$u^{32} + 12u^{30} + \cdots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} + 12y^{31} + \cdots + 13y + 1$
c_2, c_7	$y^{32} + 16y^{31} + \cdots + 17y + 1$
c_3	$y^{32} + 4y^{31} + \cdots + 2y + 1$
c_4, c_{12}	$y^{32} + 24y^{31} + \cdots + 27y + 1$
c_5, c_8	$y^{32} + 30y^{31} + \cdots + 20y + 1$
c_6, c_{10}	$y^{32} - 16y^{31} + \cdots - 18y + 1$
c_9	$y^{32} + 8y^{30} + \cdots + 4y + 1$
c_{11}	$y^{32} + 16y^{31} + \cdots - 2y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.377002 + 0.860470I$ $a = 1.018800 - 0.187235I$ $b = 0.219916 + 1.383980I$	$2.76714 - 0.89506I$	$-5.83861 - 4.76994I$
$u = 0.377002 - 0.860470I$ $a = 1.018800 + 0.187235I$ $b = 0.219916 - 1.383980I$	$2.76714 + 0.89506I$	$-5.83861 + 4.76994I$
$u = 0.418834 + 1.010070I$ $a = -1.42074 + 0.20749I$ $b = 0.20725 - 1.40604I$	$2.80871 + 5.14491I$	$-2.17318 - 8.84355I$
$u = 0.418834 - 1.010070I$ $a = -1.42074 - 0.20749I$ $b = 0.20725 + 1.40604I$	$2.80871 - 5.14491I$	$-2.17318 + 8.84355I$
$u = 0.203515 + 0.870967I$ $a = -2.64540 - 0.11143I$ $b = 0.48543 - 1.35345I$	$3.16341 + 3.49472I$	$-3.10019 + 1.18656I$
$u = 0.203515 - 0.870967I$ $a = -2.64540 + 0.11143I$ $b = 0.48543 + 1.35345I$	$3.16341 - 3.49472I$	$-3.10019 - 1.18656I$
$u = -0.587384 + 0.953739I$ $a = 1.31554 - 0.73873I$ $b = -0.560197 - 0.407437I$	$-3.32326 - 5.79350I$	$-12.88067 + 4.76334I$
$u = -0.587384 - 0.953739I$ $a = 1.31554 + 0.73873I$ $b = -0.560197 + 0.407437I$	$-3.32326 + 5.79350I$	$-12.88067 - 4.76334I$
$u = 0.471154 + 1.030510I$ $a = -1.50990 - 0.23394I$ $b = 0.897386 - 0.457167I$	$-1.46713 + 2.66367I$	$-9.37615 - 3.62773I$
$u = 0.471154 - 1.030510I$ $a = -1.50990 + 0.23394I$ $b = 0.897386 + 0.457167I$	$-1.46713 - 2.66367I$	$-9.37615 + 3.62773I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.149428+0.798777I$ $a=\ \ 2.85577-0.67738I$ $b=-0.535357-1.206510I$	$2.22534-8.20210I$	$-4.23687+6.52948I$
$u=-0.149428-0.798777I$ $a=\ \ 2.85577+0.67738I$ $b=-0.535357+1.206510I$	$2.22534+8.20210I$	$-4.23687-6.52948I$
$u=-0.991072+0.661101I$ $a=-0.019774-0.607455I$ $b=-0.215493-0.674465I$	$-2.55638+2.43576I$	$-11.15253-3.40731I$
$u=-0.991072-0.661101I$ $a=-0.019774+0.607455I$ $b=-0.215493+0.674465I$	$-2.55638-2.43576I$	$-11.15253+3.40731I$
$u=\ \ 0.089956+0.763984I$ $a=\ \ 1.069490-0.511674I$ $b=-0.07793+1.68527I$	$4.71007-2.91911I$	$-2.46966+3.28243I$
$u=\ \ 0.089956-0.763984I$ $a=\ \ 1.069490+0.511674I$ $b=-0.07793-1.68527I$	$4.71007+2.91911I$	$-2.46966-3.28243I$
$u=-0.011716+0.726969I$ $a=-1.19402-0.85169I$ $b=\ \ 0.33192+1.67681I$	$4.39632-2.40676I$	$-1.83539+3.91389I$
$u=-0.011716-0.726969I$ $a=-1.19402+0.85169I$ $b=\ \ 0.33192-1.67681I$	$4.39632+2.40676I$	$-1.83539-3.91389I$
$u=\ \ 0.360563+1.227180I$ $a=\ \ 1.194330-0.613128I$ $b=-0.451880+0.499564I$	$-3.97629+4.60062I$	$-11.29051-2.35530I$
$u=\ \ 0.360563-1.227180I$ $a=\ \ 1.194330+0.613128I$ $b=-0.451880-0.499564I$	$-3.97629-4.60062I$	$-11.29051+2.35530I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.474444+1.192130I$ $a=-1.274880-0.097578I$ $b=\ 0.326979+0.458257I$	$-5.05381-7.55872I$	$-8.36492+7.60737I$
$u=-0.474444-1.192130I$ $a=-1.274880+0.097578I$ $b=\ 0.326979-0.458257I$	$-5.05381+7.55872I$	$-8.36492-7.60737I$
$u=\ 0.576598+0.404247I$ $a=-0.427873-0.569188I$ $b=\ 0.247606+0.731597I$	$0.22424+1.55400I$	$-5.27319-3.79595I$
$u=\ 0.576598-0.404247I$ $a=-0.427873+0.569188I$ $b=\ 0.247606-0.731597I$	$0.22424-1.55400I$	$-5.27319+3.79595I$
$u=\ 0.65823+1.41559I$ $a=-0.630597+0.071697I$ $b=\ 0.529623-0.945665I$	$0.52262+3.44882I$	$0.-7.46741I$
$u=\ 0.65823-1.41559I$ $a=-0.630597-0.071697I$ $b=\ 0.529623+0.945665I$	$0.52262-3.44882I$	$0.+7.46741I$
$u=-1.05755+1.19822I$ $a=-0.243452+0.220997I$ $b=\ 0.059471+0.646924I$	$-3.09144-0.21194I$	$-19.2903+0.I$
$u=-1.05755-1.19822I$ $a=-0.243452-0.220997I$ $b=\ 0.059471-0.646924I$	$-3.09144+0.21194I$	$-19.2903+0.I$
$u=-0.164207+0.266287I$ $a=\ 2.16271-3.21122I$ $b=-0.145099-1.026200I$	$-0.18307-2.06849I$	$-5.08688+2.95139I$
$u=-0.164207-0.266287I$ $a=\ 2.16271+3.21122I$ $b=-0.145099+1.026200I$	$-0.18307+2.06849I$	$-5.08688-2.95139I$

	Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.27995+1.73326I$		
$a=$	$0.249998-0.374898I$	$-1.16649+6.91343I$	0
$b=$	$-0.319618+0.807978I$		
$u=$	$0.27995-1.73326I$		
$a=$	$0.249998+0.374898I$	$-1.16649-6.91343I$	0
$b=$	$-0.319618-0.807978I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{32}-16u^{31}+\cdots-17u+1)(u^{143}+55u^{142}+\cdots-53u-1)$
c_2	$(u^{32}+8u^{30}+\cdots+u+1)(u^{143}+u^{142}+\cdots-5u+1)$
c_3	$(u^{32}+2u^{30}+\cdots+4u+1)(u^{143}+u^{142}+\cdots+10u+3)$
c_4	$(u^{32}+12u^{30}+\cdots+u+1)(u^{143}+7u^{142}+\cdots+3881u+121)$
c_5	$(u^{32}-2u^{31}+\cdots+10u^2+1)(u^{143}-3u^{142}+\cdots-2753876u+594031)$
c_6	$(u^{32}-8u^{30}+\cdots-2u+1)(u^{143}-u^{142}+\cdots-1618u+253)$
c_7	$(u^{32}+8u^{30}+\cdots-u+1)(u^{143}+u^{142}+\cdots-5u+1)$
c_8	$(u^{32}+2u^{31}+\cdots+10u^2+1)(u^{143}-3u^{142}+\cdots-2753876u+594031)$
c_9	$(u^{32}-6u^{31}+\cdots+2u^2+1)(u^{143}-3u^{142}+\cdots-48u+1)$
c_{10}	$(u^{32}-8u^{30}+\cdots+2u+1)(u^{143}-u^{142}+\cdots-1618u+253)$
c_{11}	$(u^{32}+16u^{31}+\cdots+18u+1)(u^{143}+57u^{142}+\cdots+375838u+64009)$
c_{12}	$(u^{32}+12u^{30}+\cdots-u+1)(u^{143}+7u^{142}+\cdots+3881u+121)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{32}+12y^{31}+\cdots+13y+1)(y^{143}+79y^{142}+\cdots-1165y-1)$
c_2, c_7	$(y^{32}+16y^{31}+\cdots+17y+1)(y^{143}+55y^{142}+\cdots-53y-1)$
c_3	$(y^{32}+4y^{31}+\cdots+2y+1)(y^{143}+7y^{142}+\cdots-338y-9)$
c_4, c_{12}	$(y^{32}+24y^{31}+\cdots+27y+1)$ $\cdot(y^{143}+87y^{142}+\cdots+8076105y-14641)$
c_5, c_8	$(y^{32}+30y^{31}+\cdots+20y+1)$ $\cdot(y^{143}+109y^{142}+\cdots-10735503242368y-352872828961)$
c_6, c_{10}	$(y^{32}-16y^{31}+\cdots-18y+1)(y^{143}-57y^{142}+\cdots+375838y-64009)$
c_9	$(y^{32}+8y^{30}+\cdots+4y+1)(y^{143}-y^{142}+\cdots+32y-1)$
c_{11}	$(y^{32}+16y^{31}+\cdots-2y+1)$ $\cdot(y^{143}+75y^{142}+\cdots-771783103574y-4097152081)$