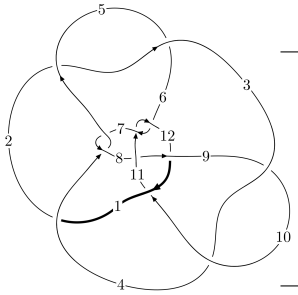
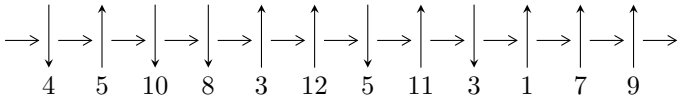
$12n_{0789}$ $(K12n_{0789})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -9.62341 \times 10^{256} u^{81} + 4.36659 \times 10^{257} u^{80} + \cdots + 3.22941 \times 10^{256} b - 7.42547 \times 10^{256},$$
$$4.79036 \times 10^{256} u^{81} - 4.33578 \times 10^{257} u^{80} + \cdots + 3.22941 \times 10^{256} a - 1.08341 \times 10^{258},\ u^{82} - 5u^{81} + \cdots - 9u$$
$$I_2^u = \langle -2.14857 \times 10^{33} u^{37} - 1.68774 \times 10^{34} u^{36} + \cdots + 4.97146 \times 10^{32} b - 1.06077 \times 10^{33},$$
$$3.40194 \times 10^{33} u^{37} + 2.65994 \times 10^{34} u^{36} + \cdots + 4.97146 \times 10^{32} a + 3.48145 \times 10^{33},\ u^{38} + 8u^{37} + \cdots + 7u + 1$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 120 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. $\boldsymbol{I_1^u = \langle -9.62 \times 10^{256} u^{81} + 4.37 \times 10^{257} u^{80} + \cdots + 3.23 \times 10^{256} b - 7.43 \times 10^{256},\ 4.79 \times 10^{256} u^{81} - 4.34 \times 10^{257} u^{80} + \cdots + 3.23 \times 10^{256} a - 1.08 \times 10^{258},\ u^{82} - 5u^{81} + \cdots - 9u + 1 \rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} -1.48335u^{81} + 13.4259u^{80} + \cdots - 314.049u + 33.5482 \\ 2.97993u^{81} - 13.5213u^{80} + \cdots + 0.624686u + 2.29933 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -6.90787u^{81} + 34.0673u^{80} + \cdots - 7.25907u - 12.3927 \\ -3.93969u^{81} + 21.1683u^{80} + \cdots - 134.630u + 16.2614 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1.49657u^{81} - 0.0953944u^{80} + \cdots - 313.424u + 35.8475 \\ 2.97993u^{81} - 13.5213u^{80} + \cdots + 0.624686u + 2.29933 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -6.98693u^{81} + 29.0151u^{80} + \cdots + 266.633u - 50.5502 \\ -5.97289u^{81} + 28.6846u^{80} + \cdots - 19.3508u - 3.05047 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -8.09243u^{81} + 34.6437u^{80} + \cdots + 228.950u - 46.1752 \\ -6.93732u^{81} + 33.6383u^{80} + \cdots - 55.0188u + 1.22337 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -8.09243u^{81} + 34.6437u^{80} + \cdots + 228.950u - 46.1752 \\ -6.40134u^{81} + 30.5632u^{80} + \cdots - 10.7452u - 4.59507 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 18.4534u^{81} - 92.4177u^{80} + \cdots + 301.801u - 21.4321 \\ 2.22211u^{81} - 13.2729u^{80} + \cdots + 136.502u - 18.2729 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.54299u^{81} + 11.0282u^{80} + \cdots - 136.510u + 14.2742 \\ 2.49596u^{81} - 11.4503u^{80} + \cdots + 53.5123u - 3.37749 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.97826u^{81} + 10.7782u^{80} + \cdots + 181.549u - 52.6251$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{82} - 2u^{81} + \cdots - 144006814u + 92506631$
c_2, c_5	$u^{82} + 8u^{81} + \cdots + 285305320u + 28654393$
c_3, c_9	$u^{82} - 2u^{81} + \cdots + 3176u + 3053$
c_4, c_7	$u^{82} - 5u^{81} + \cdots - 9u + 1$
c_6, c_{11}	$u^{82} - 2u^{81} + \cdots - 1903u + 193$
c_8	$u^{82} + 3u^{81} + \cdots - 14399u + 1273$
c_{10}	$u^{82} + 4u^{81} + \cdots + 1322u + 307$
c_{12}	$u^{82} - 4u^{81} + \cdots - 360727464u + 76941877$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{82} - 86y^{81} + \cdots - 27578920347511596y + 8557476778970161$
c_2, c_5	$y^{82} + 84y^{81} + \cdots - 16527381541916668y + 821074238198449$
c_3, c_9	$y^{82} - 70y^{81} + \cdots - 64668510y + 9320809$
c_4, c_7	$y^{82} + 19y^{81} + \cdots + 81y + 1$
c_6, c_{11}	$y^{82} + 76y^{81} + \cdots - 3045y + 37249$
c_8	$y^{82} + 19y^{81} + \cdots + 35322967y + 1620529$
c_{10}	$y^{82} + 4y^{81} + \cdots + 789978y + 94249$
c_{12}	$y^{82} + 38y^{81} + \cdots + 86506044299292766y + 5920052436283129$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.056723 + 0.964872I$ $a = 1.37031 + 0.67536I$ $b = -0.289704 - 0.025564I$	$1.40440 + 4.15567I$	0
$u = 0.056723 - 0.964872I$ $a = 1.37031 - 0.67536I$ $b = -0.289704 + 0.025564I$	$1.40440 - 4.15567I$	0
$u = -0.178708 + 1.060670I$ $a = 0.672194 - 0.146847I$ $b = -0.14351 - 1.65591I$	$-4.60976 - 1.70624I$	0
$u = -0.178708 - 1.060670I$ $a = 0.672194 + 0.146847I$ $b = -0.14351 + 1.65591I$	$-4.60976 + 1.70624I$	0
$u = -0.462793 + 0.789203I$ $a = 1.94590 + 0.72997I$ $b = -0.383521 - 1.052400I$	$-0.66968 + 1.34659I$	0
$u = -0.462793 - 0.789203I$ $a = 1.94590 - 0.72997I$ $b = -0.383521 + 1.052400I$	$-0.66968 - 1.34659I$	0
$u = -0.100143 + 0.905993I$ $a = -2.03793 + 0.42379I$ $b = 0.613296 + 0.753156I$	$3.23144 - 0.92093I$	0
$u = -0.100143 - 0.905993I$ $a = -2.03793 - 0.42379I$ $b = 0.613296 - 0.753156I$	$3.23144 + 0.92093I$	0
$u = 0.819623 + 0.726122I$ $a = 0.365501 + 0.230418I$ $b = 0.20556 + 1.48772I$	$-7.23484 - 0.77529I$	0
$u = 0.819623 - 0.726122I$ $a = 0.365501 - 0.230418I$ $b = 0.20556 - 1.48772I$	$-7.23484 + 0.77529I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.303048 + 0.851736I$ $a = -1.88227 - 1.10824I$ $b = 1.226900 - 0.082101I$	$4.36049 - 2.15843I$	0
$u = 0.303048 - 0.851736I$ $a = -1.88227 + 1.10824I$ $b = 1.226900 + 0.082101I$	$4.36049 + 2.15843I$	0
$u = 0.096694 + 1.151330I$ $a = 1.317440 - 0.057645I$ $b = -0.898102 - 0.440443I$	$0.102335 - 0.805883I$	0
$u = 0.096694 - 1.151330I$ $a = 1.317440 + 0.057645I$ $b = -0.898102 + 0.440443I$	$0.102335 + 0.805883I$	0
$u = -0.699295 + 0.395601I$ $a = 3.21229 - 2.97384I$ $b = 0.10447 - 1.70528I$	$-7.31286 + 5.25289I$	$-4.83806 - 7.69489I$
$u = -0.699295 - 0.395601I$ $a = 3.21229 + 2.97384I$ $b = 0.10447 + 1.70528I$	$-7.31286 - 5.25289I$	$-4.83806 + 7.69489I$
$u = 0.578459 + 0.528250I$ $a = 1.13288 + 1.69205I$ $b = 0.089527 + 0.178860I$	$-0.57429 - 6.85107I$	$2.69108 - 1.63480I$
$u = 0.578459 - 0.528250I$ $a = 1.13288 - 1.69205I$ $b = 0.089527 - 0.178860I$	$-0.57429 + 6.85107I$	$2.69108 + 1.63480I$
$u = -0.726408 + 0.292025I$ $a = 0.290860 + 0.066462I$ $b = -0.087141 - 1.137640I$	$-2.39617 + 2.63265I$	$0. - 3.56398I$
$u = -0.726408 - 0.292025I$ $a = 0.290860 - 0.066462I$ $b = -0.087141 + 1.137640I$	$-2.39617 - 2.63265I$	$0. + 3.56398I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.389609+0.672619I$ $a=-0.312060-0.644701I$ $b=-0.10406+1.55102I$	$-5.28113+6.02668I$	$-0.83509-9.93765I$
$u=-0.389609-0.672619I$ $a=-0.312060+0.644701I$ $b=-0.10406-1.55102I$	$-5.28113-6.02668I$	$-0.83509+9.93765I$
$u=-1.227010+0.083228I$ $a=-0.228622-0.202291I$ $b=\ \ 0.125008-1.085830I$	$-6.76066+0.17831I$	0
$u=-1.227010-0.083228I$ $a=-0.228622+0.202291I$ $b=\ \ 0.125008+1.085830I$	$-6.76066-0.17831I$	0
$u=\ \ 0.213840+0.716879I$ $a=\ \ 2.94719-3.15470I$ $b=-0.10463+1.62106I$	$-4.77668-4.91554I$	$5.80425+7.31495I$
$u=\ \ 0.213840-0.716879I$ $a=\ \ 2.94719+3.15470I$ $b=-0.10463-1.62106I$	$-4.77668+4.91554I$	$5.80425-7.31495I$
$u=-0.845531+0.931008I$ $a=-0.790053+0.732156I$ $b=\ \ 0.887959+0.172806I$	$-2.10266+4.70360I$	0
$u=-0.845531-0.931008I$ $a=-0.790053-0.732156I$ $b=\ \ 0.887959-0.172806I$	$-2.10266-4.70360I$	0
$u=\ \ 0.749079+1.025990I$ $a=\ \ 1.47656+0.10493I$ $b=-0.27067+1.41969I$	$-6.33650-5.10935I$	0
$u=\ \ 0.749079-1.025990I$ $a=\ \ 1.47656-0.10493I$ $b=-0.27067-1.41969I$	$-6.33650+5.10935I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.646385+1.094070I$ $a=-1.088150-0.099223I$ $b=\ \ 0.582063+0.903467I$	$-3.13677+5.80187I$	0
$u=-0.646385-1.094070I$ $a=-1.088150+0.099223I$ $b=\ \ 0.582063-0.903467I$	$-3.13677-5.80187I$	0
$u=-0.862329+0.934321I$ $a=\ \ 0.528921-0.207487I$ $b=-0.651249+0.150043I$	$-2.11824+1.66557I$	0
$u=-0.862329-0.934321I$ $a=\ \ 0.528921+0.207487I$ $b=-0.651249-0.150043I$	$-2.11824-1.66557I$	0
$u=-0.366398+1.230750I$ $a=-1.44997-0.60149I$ $b=\ \ 0.645386+1.088180I$	$2.07065+5.92091I$	0
$u=-0.366398-1.230750I$ $a=-1.44997+0.60149I$ $b=\ \ 0.645386-1.088180I$	$2.07065-5.92091I$	0
$u=\ \ 0.542418+0.448908I$ $a=-0.808272-0.209146I$ $b=\ \ 0.410061+0.391443I$	$-2.49574-1.83560I$	$0.724028+0.349432I$
$u=\ \ 0.542418-0.448908I$ $a=-0.808272+0.209146I$ $b=\ \ 0.410061-0.391443I$	$-2.49574+1.83560I$	$0.724028-0.349432I$
$u=\ \ 0.962244+0.895870I$ $a=-1.59591-0.91749I$ $b=\ \ 0.86805-1.72981I$	$-13.1403-7.5526I$	0
$u=\ \ 0.962244-0.895870I$ $a=-1.59591+0.91749I$ $b=\ \ 0.86805+1.72981I$	$-13.1403+7.5526I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.069690+0.791365I$ $a=-0.263944+0.770014I$ $b=1.58821-0.26194I$	$-8.81768-1.56510I$	0
$u=-1.069690-0.791365I$ $a=-0.263944-0.770014I$ $b=1.58821+0.26194I$	$-8.81768+1.56510I$	0
$u=0.880487+1.028230I$ $a=-0.277301+0.180815I$ $b=-0.80666-1.79638I$	$-12.69480+0.72849I$	0
$u=0.880487-1.028230I$ $a=-0.277301-0.180815I$ $b=-0.80666+1.79638I$	$-12.69480-0.72849I$	0
$u=-0.353207+0.522372I$ $a=0.740973-0.001919I$ $b=-0.218396-0.458164I$	$0.013980+1.160290I$	$0.33727-6.21213I$
$u=-0.353207-0.522372I$ $a=0.740973+0.001919I$ $b=-0.218396+0.458164I$	$0.013980-1.160290I$	$0.33727+6.21213I$
$u=1.159320+0.750807I$ $a=1.09132+1.27721I$ $b=0.14334+1.62386I$	$-13.52490-0.33649I$	0
$u=1.159320-0.750807I$ $a=1.09132-1.27721I$ $b=0.14334-1.62386I$	$-13.52490+0.33649I$	0
$u=1.016470+0.943389I$ $a=-1.58614-0.92505I$ $b=0.32907-1.59367I$	$-8.30955-9.31916I$	0
$u=1.016470-0.943389I$ $a=-1.58614+0.92505I$ $b=0.32907+1.59367I$	$-8.30955+9.31916I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.88767+1.12945I$ $a=\ \ 0.894183-0.834230I$ $b=-1.75669-0.19726I$	$-7.72019+8.70253I$	0
$u=-0.88767-1.12945I$ $a=\ \ 0.894183+0.834230I$ $b=-1.75669+0.19726I$	$-7.72019-8.70253I$	0
$u=-0.19030+1.43376I$ $a=-1.377440+0.014744I$ $b=\ \ 0.430237+0.966969I$	$5.90567+1.67066I$	0
$u=-0.19030-1.43376I$ $a=-1.377440-0.014744I$ $b=\ \ 0.430237-0.966969I$	$5.90567-1.67066I$	0
$u=\ \ 0.97104+1.08776I$ $a=\ \ 0.027310-0.524556I$ $b=-0.29576-1.54330I$	$-7.89118+2.00203I$	0
$u=\ \ 0.97104-1.08776I$ $a=\ \ 0.027310+0.524556I$ $b=-0.29576+1.54330I$	$-7.89118-2.00203I$	0
$u=\ \ 1.22860+0.80379I$ $a=-0.240704-0.351393I$ $b=\ \ 0.06321-1.44996I$	$-11.44520-3.42440I$	0
$u=\ \ 1.22860-0.80379I$ $a=-0.240704+0.351393I$ $b=\ \ 0.06321+1.44996I$	$-11.44520+3.42440I$	0
$u=-1.27855+0.76471I$ $a=\ \ 0.236161-0.267489I$ $b=\ \ 0.284369-0.193813I$	$-6.77295+2.33302I$	0
$u=-1.27855-0.76471I$ $a=\ \ 0.236161+0.267489I$ $b=\ \ 0.284369+0.193813I$	$-6.77295-2.33302I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.19349 + 0.89404I$ $a = 0.064960 + 0.216012I$ $b = 0.64253 + 1.62640I$	$-14.6713 + 9.2496I$	0
$u = 1.19349 - 0.89404I$ $a = 0.064960 - 0.216012I$ $b = 0.64253 - 1.62640I$	$-14.6713 - 9.2496I$	0
$u = 0.97522 + 1.14997I$ $a = 1.47478 + 0.52261I$ $b = -0.65420 + 1.69757I$	$-13.7557 - 17.0492I$	0
$u = 0.97522 - 1.14997I$ $a = 1.47478 - 0.52261I$ $b = -0.65420 - 1.69757I$	$-13.7557 + 17.0492I$	0
$u = 0.90961 + 1.20942I$ $a = 0.405035 + 0.724327I$ $b = -0.08439 + 1.59694I$	$-12.04370 - 7.15684I$	0
$u = 0.90961 - 1.20942I$ $a = 0.405035 - 0.724327I$ $b = -0.08439 - 1.59694I$	$-12.04370 + 7.15684I$	0
$u = 0.292039 + 0.374863I$ $a = 2.29251 + 4.43476I$ $b = -1.352360 + 0.155525I$	$2.85372 - 0.29029I$	$-2.55127 - 11.86076I$
$u = 0.292039 - 0.374863I$ $a = 2.29251 - 4.43476I$ $b = -1.352360 - 0.155525I$	$2.85372 + 0.29029I$	$-2.55127 + 11.86076I$
$u = 1.04570 + 1.18848I$ $a = -0.845910 - 0.168170I$ $b = -0.09756 - 1.49247I$	$-10.29390 - 4.70406I$	0
$u = 1.04570 - 1.18848I$ $a = -0.845910 + 0.168170I$ $b = -0.09756 + 1.49247I$	$-10.29390 + 4.70406I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.51769+1.53041I$ $a=\ \ 1.010180+0.184391I$ $b=-0.685735-1.129040I$	$-1.96971+6.53864I$	0
$u=-0.51769-1.53041I$ $a=\ \ 1.010180-0.184391I$ $b=-0.685735+1.129040I$	$-1.96971-6.53864I$	0
$u=-1.07949+1.23119I$ $a=-0.150197-0.200956I$ $b=-0.218385-0.170130I$	$-5.35295+6.03316I$	0
$u=-1.07949-1.23119I$ $a=-0.150197+0.200956I$ $b=-0.218385+0.170130I$	$-5.35295-6.03316I$	0
$u=\ \ 0.063591+0.355845I$ $a=-3.07917-2.53685I$ $b=-0.453391-0.046277I$	$2.07593+0.66087I$	$1.35169-2.61583I$
$u=\ \ 0.063591-0.355845I$ $a=-3.07917+2.53685I$ $b=-0.453391+0.046277I$	$2.07593-0.66087I$	$1.35169+2.61583I$
$u=\ \ 0.120818+0.330295I$ $a=\ \ 3.33005+0.04070I$ $b=-0.13948+1.54899I$	$-6.96880-2.54329I$	$-2.34300+2.14779I$
$u=\ \ 0.120818-0.330295I$ $a=\ \ 3.33005-0.04070I$ $b=-0.13948-1.54899I$	$-6.96880+2.54329I$	$-2.34300-2.14779I$
$u=\ \ 0.196647+0.242071I$ $a=-0.20585-6.91105I$ $b=-0.319550+0.356310I$	$1.89096-1.13098I$	$11.56539+0.21415I$
$u=\ \ 0.196647-0.242071I$ $a=-0.20585+6.91105I$ $b=-0.319550-0.356310I$	$1.89096+1.13098I$	$11.56539-0.21415I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.006054 + 0.240892I$		
$a = -1.60761 + 1.00420I$	$-1.89830 - 3.55331I$	$-1.6638 + 14.9075I$
$b = -0.224096 + 1.245980I$		
$u = \quad 0.006054 - 0.240892I$		
$a = -1.60761 - 1.00420I$	$-1.89830 + 3.55331I$	$-1.6638 - 14.9075I$
$b = -0.224096 - 1.245980I$		

II.

$\boldsymbol{I_2^u = \langle -2.15\times 10^{33}u^{37} - 1.69\times 10^{34}u^{36} + \cdots + 4.97\times 10^{32}b - 1.06\times 10^{33},\ 3.40\times 10^{33}u^{37} + 2.66\times 10^{34}u^{36} + \cdots + 4.97\times 10^{32}a + 3.48\times 10^{33},\ u^{38} + 8u^{37} + \cdots + 7u + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} -6.84294u^{37} - 53.5042u^{36} + \cdots - 68.5747u - 7.00288 \\ 4.32182u^{37} + 33.9487u^{36} + \cdots + 32.5932u + 2.13372 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -3.65625u^{37} - 24.2459u^{36} + \cdots + 65.6553u + 9.21327 \\ -0.343247u^{37} - 0.716353u^{36} + \cdots + 18.4677u + 4.74862 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -2.52112u^{37} - 19.5555u^{36} + \cdots - 35.9815u - 4.86916 \\ 4.32182u^{37} + 33.9487u^{36} + \cdots + 32.5932u + 2.13372 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 4.41538u^{37} + 35.3801u^{36} + \cdots + 6.32562u - 1.24235 \\ 1.08405u^{37} + 10.1404u^{36} + \cdots + 69.0262u + 11.2632 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 4.79819u^{37} + 37.9855u^{36} + \cdots + 17.5569u + 0.749907 \\ 1.58195u^{37} + 13.8929u^{36} + \cdots + 83.0743u + 13.7126 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 4.79819u^{37} + 37.9855u^{36} + \cdots + 17.5569u + 0.749907 \\ 2.08366u^{37} + 18.2615u^{36} + \cdots + 85.0723u + 13.3125 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1.04766u^{37} - 10.7229u^{36} + \cdots - 149.836u - 22.5274 \\ -1.19355u^{37} - 10.7078u^{36} + \cdots - 10.3382u - 3.56641 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2.65630u^{37} + 25.1708u^{36} + \cdots + 62.8045u + 8.32877 \\ 1.77577u^{37} + 18.1344u^{36} + \cdots + 102.376u + 16.9761 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -18.4365u^{37} - 139.394u^{36} + \cdots + 32.3432u + 20.9166$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{38} - 17u^{37} + \cdots - 622u + 113$
c_2	$u^{38} - u^{37} + \cdots + 2u + 1$
c_3	$u^{38} - u^{37} + \cdots - 8u + 3$
c_4	$u^{38} - 8u^{37} + \cdots - 7u + 1$
c_5	$u^{38} + u^{37} + \cdots - 2u + 1$
c_6	$u^{38} - u^{37} + \cdots - u + 3$
c_7	$u^{38} + 8u^{37} + \cdots + 7u + 1$
c_8	$u^{38} + 6u^{37} + \cdots - u + 1$
c_9	$u^{38} + u^{37} + \cdots + 8u + 3$
c_{10}	$u^{38} + 7u^{37} + \cdots - 2u + 1$
c_{11}	$u^{38} + u^{37} + \cdots + u + 3$
c_{12}	$u^{38} + u^{37} + \cdots + 110u + 89$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{38} - 31y^{37} + \cdots - 367222y + 12769$
c_2, c_5	$y^{38} + 3y^{37} + \cdots - 14y + 1$
c_3, c_9	$y^{38} - 23y^{37} + \cdots - 244y + 9$
c_4, c_7	$y^{38} + 18y^{37} + \cdots + 31y + 1$
c_6, c_{11}	$y^{38} + 23y^{37} + \cdots + 221y + 9$
c_8	$y^{38} - 6y^{37} + \cdots + 9y + 1$
c_{10}	$y^{38} - 13y^{37} + \cdots + 32y + 1$
c_{12}	$y^{38} - 7y^{37} + \cdots - 169808y + 7921$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.352789 + 0.866549I$ $a = 1.74784 + 0.95527I$ $b = -1.45792 + 0.06474I$	$3.95057 - 2.14775I$	$-4.78032 + 3.77933I$
$u = 0.352789 - 0.866549I$ $a = 1.74784 - 0.95527I$ $b = -1.45792 - 0.06474I$	$3.95057 + 2.14775I$	$-4.78032 - 3.77933I$
$u = -0.629027 + 0.687461I$ $a = 1.29753 - 1.46383I$ $b = -0.346037 - 0.507884I$	$-0.61277 + 7.33934I$	$1.7844 - 14.3872I$
$u = -0.629027 - 0.687461I$ $a = 1.29753 + 1.46383I$ $b = -0.346037 + 0.507884I$	$-0.61277 - 7.33934I$	$1.7844 + 14.3872I$
$u = -0.101139 + 0.897836I$ $a = -2.09405 + 0.51061I$ $b = 0.831878 + 0.573687I$	$2.79247 - 0.02816I$	$4.78465 - 3.03175I$
$u = -0.101139 - 0.897836I$ $a = -2.09405 - 0.51061I$ $b = 0.831878 - 0.573687I$	$2.79247 + 0.02816I$	$4.78465 + 3.03175I$
$u = 0.632844 + 0.917160I$ $a = -0.021342 - 0.196794I$ $b = -0.24191 - 1.52062I$	$-7.01708 + 0.55312I$	0
$u = 0.632844 - 0.917160I$ $a = -0.021342 + 0.196794I$ $b = -0.24191 + 1.52062I$	$-7.01708 - 0.55312I$	0
$u = -0.877524 + 0.699983I$ $a = -0.189971 + 0.127566I$ $b = 0.173812 - 0.815821I$	$-3.98950 + 3.38487I$	0
$u = -0.877524 - 0.699983I$ $a = -0.189971 - 0.127566I$ $b = 0.173812 + 0.815821I$	$-3.98950 - 3.38487I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.353345+1.083630I$ $a=\ \ 1.089930-0.598891I$ $b=-0.363056-0.740660I$	$0.86108-3.29316I$	0
$u=-0.353345-1.083630I$ $a=\ \ 1.089930+0.598891I$ $b=-0.363056+0.740660I$	$0.86108+3.29316I$	0
$u=-0.313695+0.770845I$ $a=-1.87038+0.30882I$ $b=-0.021223+0.432106I$	$2.46341+2.12648I$	$2.90240-5.27421I$
$u=-0.313695-0.770845I$ $a=-1.87038-0.30882I$ $b=-0.021223-0.432106I$	$2.46341-2.12648I$	$2.90240+5.27421I$
$u=\ \ 0.691018+1.038320I$ $a=-1.55280+0.11680I$ $b=\ \ 0.227951-1.392460I$	$-6.47040-5.59268I$	0
$u=\ \ 0.691018-1.038320I$ $a=-1.55280-0.11680I$ $b=\ \ 0.227951+1.392460I$	$-6.47040+5.59268I$	0
$u=-0.785751+1.079380I$ $a=\ \ 1.013560-0.146565I$ $b=-0.504573-0.542120I$	$-2.87110+2.81960I$	0
$u=-0.785751-1.079380I$ $a=\ \ 1.013560+0.146565I$ $b=-0.504573+0.542120I$	$-2.87110-2.81960I$	0
$u=-0.388723+1.277330I$ $a=-1.38052-0.50044I$ $b=\ \ 0.781808+1.052230I$	$1.43213+6.12968I$	0
$u=-0.388723-1.277330I$ $a=-1.38052+0.50044I$ $b=\ \ 0.781808-1.052230I$	$1.43213-6.12968I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.475743+0.330989I$ $a=-0.65399+4.68543I$ $b=\ \ 0.315408+0.726183I$	$1.52090+1.37055I$	$-3.68681-9.43784I$
$u=-0.475743-0.330989I$ $a=-0.65399-4.68543I$ $b=\ \ 0.315408-0.726183I$	$1.52090-1.37055I$	$-3.68681+9.43784I$
$u=-1.32070+0.55561I$ $a=-0.322060-0.082392I$ $b=-0.301072+0.813070I$	$-7.34031+1.79730I$	0
$u=-1.32070-0.55561I$ $a=-0.322060+0.082392I$ $b=-0.301072-0.813070I$	$-7.34031-1.79730I$	0
$u=-0.37905+1.38204I$ $a=\ \ 1.081510+0.406701I$ $b=-0.518632-1.152720I$	$-0.88392+6.83150I$	0
$u=-0.37905-1.38204I$ $a=\ \ 1.081510-0.406701I$ $b=-0.518632+1.152720I$	$-0.88392-6.83150I$	0
$u=\ \ 0.226714+0.484618I$ $a=-4.54772-4.12122I$ $b=\ \ 1.288630-0.043223I$	$2.95519-0.51266I$	$13.2029+16.8835I$
$u=\ \ 0.226714-0.484618I$ $a=-4.54772+4.12122I$ $b=\ \ 1.288630+0.043223I$	$2.95519+0.51266I$	$13.2029-16.8835I$
$u=-0.223592+0.482018I$ $a=-0.166910+0.346503I$ $b=-0.260798+1.336940I$	$-1.80869-3.25226I$	$5.74296-8.83230I$
$u=-0.223592-0.482018I$ $a=-0.166910-0.346503I$ $b=-0.260798-1.336940I$	$-1.80869+3.25226I$	$5.74296+8.83230I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.22202+1.47524I$ $a=-1.326600+0.059140I$ $b=\ 0.416637+0.999305I$	$5.77418+1.60449I$	0
$u=-0.22202-1.47524I$ $a=-1.326600-0.059140I$ $b=\ 0.416637-0.999305I$	$5.77418-1.60449I$	0
$u=\ 1.14464+0.99621I$ $a=\ 0.562780+0.396717I$ $b=-0.04204+1.52291I$	$-11.12780-4.08584I$	0
$u=\ 1.14464-0.99621I$ $a=\ 0.562780-0.396717I$ $b=-0.04204-1.52291I$	$-11.12780+4.08584I$	0
$u=\ 0.042712+0.378769I$ $a=\ 1.19454+4.71439I$ $b=-0.04195-1.66698I$	$-5.69981-4.89986I$	$-3.76261+4.32816I$
$u=\ 0.042712-0.378769I$ $a=\ 1.19454-4.71439I$ $b=-0.04195+1.66698I$	$-5.69981+4.89986I$	$-3.76261-4.32816I$
$u=-1.02039+1.29488I$ $a=-0.361341+0.091755I$ $b=\ 0.563084+0.458672I$	$-5.18233+6.46286I$	0
$u=-1.02039-1.29488I$ $a=-0.361341-0.091755I$ $b=\ 0.563084-0.458672I$	$-5.18233-6.46286I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{38}-17u^{37}+\cdots-622u+113)$ $\cdot(u^{82}-2u^{81}+\cdots-144006814u+92506631)$
c_2	$(u^{38}-u^{37}+\cdots+2u+1)$ $\cdot(u^{82}+8u^{81}+\cdots+285305320u+28654393)$
c_3	$(u^{38}-u^{37}+\cdots-8u+3)(u^{82}-2u^{81}+\cdots+3176u+3053)$
c_4	$(u^{38}-8u^{37}+\cdots-7u+1)(u^{82}-5u^{81}+\cdots-9u+1)$
c_5	$(u^{38}+u^{37}+\cdots-2u+1)$ $\cdot(u^{82}+8u^{81}+\cdots+285305320u+28654393)$
c_6	$(u^{38}-u^{37}+\cdots-u+3)(u^{82}-2u^{81}+\cdots-1903u+193)$
c_7	$(u^{38}+8u^{37}+\cdots+7u+1)(u^{82}-5u^{81}+\cdots-9u+1)$
c_8	$(u^{38}+6u^{37}+\cdots-u+1)(u^{82}+3u^{81}+\cdots-14399u+1273)$
c_9	$(u^{38}+u^{37}+\cdots+8u+3)(u^{82}-2u^{81}+\cdots+3176u+3053)$
c_{10}	$(u^{38}+7u^{37}+\cdots-2u+1)(u^{82}+4u^{81}+\cdots+1322u+307)$
c_{11}	$(u^{38}+u^{37}+\cdots+u+3)(u^{82}-2u^{81}+\cdots-1903u+193)$
c_{12}	$(u^{38}+u^{37}+\cdots+110u+89)$ $\cdot(u^{82}-4u^{81}+\cdots-360727464u+76941877)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{38} - 31y^{37} + \cdots - 367222y + 12769)$ $\cdot (y^{82} - 86y^{81} + \cdots - 27578920347511596y + 8557476778970161)$
c_2, c_5	$(y^{38} + 3y^{37} + \cdots - 14y + 1)$ $\cdot (y^{82} + 84y^{81} + \cdots - 16527381541916668y + 821074238198449)$
c_3, c_9	$(y^{38} - 23y^{37} + \cdots - 244y + 9)$ $\cdot (y^{82} - 70y^{81} + \cdots - 64668510y + 9320809)$
c_4, c_7	$(y^{38} + 18y^{37} + \cdots + 31y + 1)(y^{82} + 19y^{81} + \cdots + 81y + 1)$
c_6, c_{11}	$(y^{38} + 23y^{37} + \cdots + 221y + 9)(y^{82} + 76y^{81} + \cdots - 3045y + 37249)$
c_8	$(y^{38} - 6y^{37} + \cdots + 9y + 1)$ $\cdot (y^{82} + 19y^{81} + \cdots + 35322967y + 1620529)$
c_{10}	$(y^{38} - 13y^{37} + \cdots + 32y + 1)(y^{82} + 4y^{81} + \cdots + 789978y + 94249)$
c_{12}	$(y^{38} - 7y^{37} + \cdots - 169808y + 7921)$ $\cdot (y^{82} + 38y^{81} + \cdots + 86506044299292766y + 5920052436283129)$