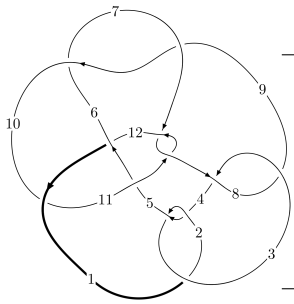
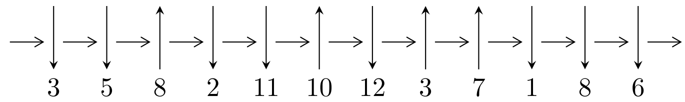
$12n_{0255}$ $(K12n_{0255})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 1.59660 \times 10^{327} u^{87} - 4.52798 \times 10^{327} u^{86} + \cdots + 9.40594 \times 10^{329} b + 8.06817 \times 10^{330}, \\
& - 1.52962 \times 10^{329} u^{87} + 3.20986 \times 10^{329} u^{86} + \cdots + 4.75941 \times 10^{331} a - 3.66335 \times 10^{331}, \\
& u^{88} - 2u^{87} + \cdots - 4968u - 1771 \rangle \\
I_2^u = \langle & 4u^8 + u^6 - 4u^5 + 2u^4 - 5u^3 - u^2 + 7b + u + 3,\ 4u^8 + 7u^7 + 15u^6 + 10u^5 + 16u^4 + 9u^3 + 13u^2 + 7a + u + 3 \\
& u^9 + u^8 + 2u^7 + u^6 + 3u^5 + u^4 + 2u^3 + u - 1 \rangle \\
I_3^u = \langle & -4u^{15} - 30u^{13} + \cdots + b + 8,\ 2u^{15} + 14u^{13} + \cdots + a - 7,\ u^{16} + 8u^{14} + \cdots - 3u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 113 representations.

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[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. $\boldsymbol{I_1^u = \langle 1.60 \times 10^{327} u^{87} - 4.53 \times 10^{327} u^{86} + \cdots + 9.41 \times 10^{329} b + 8.07 \times 10^{330},\ -1.53 \times 10^{329} u^{87} + 3.21 \times 10^{329} u^{86} + \cdots + 4.76 \times 10^{331} a - 3.66 \times 10^{331},\ u^{88} - 2u^{87} + \cdots - 4968u - 1771\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.00321388u^{87} - 0.00674424u^{86} + \cdots - 11.3051u + 0.769708 \\ -0.00169744u^{87} + 0.00481396u^{86} + \cdots - 12.5593u - 8.57774 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.00233250u^{87} - 0.00315963u^{86} + \cdots - 27.9840u - 7.24757 \\ -0.00137179u^{87} + 0.00300797u^{86} + \cdots - 5.06937u - 5.35127 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.00153178u^{87} - 0.00266896u^{86} + \cdots - 23.2890u - 2.25667 \\ -0.00185920u^{87} + 0.00347861u^{86} + \cdots + 19.0323u + 2.82726 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.000327420u^{87} + 0.000809657u^{86} + \cdots - 4.25669u + 0.570591 \\ -0.00185920u^{87} + 0.00347861u^{86} + \cdots + 19.0323u + 2.82726 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.000561869u^{87} - 0.00155079u^{86} + \cdots - 8.50672u - 1.66797 \\ -0.000861961u^{87} + 0.00450290u^{86} + \cdots - 41.5986u - 14.7883 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.000151726u^{87} + 0.00147337u^{86} + \cdots + 0.554564u - 2.10313 \\ -0.00150768u^{87} + 0.00204381u^{86} + \cdots + 20.3844u + 3.14401 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.00467421u^{87} + 0.0109893u^{86} + \cdots + 15.1651u - 4.16426 \\ 0.00197314u^{87} - 0.00700781u^{86} + \cdots + 30.3390u + 12.6165 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.000632418u^{87} - 0.00298532u^{86} + \cdots + 1.50043u + 2.65355 \\ -1.09936 \times 10^{-6}u^{87} + 0.00267945u^{86} + \cdots - 37.8923u - 12.7574 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0135860u^{87} - 0.0234158u^{86} + \cdots - 148.906u - 31.3158$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{88}+36u^{87}+\cdots+9016u+2401$
c_2, c_4	$u^{88}-16u^{87}+\cdots+504u-49$
c_3, c_8	$u^{88}+u^{87}+\cdots+14336u+25088$
c_5	$u^{88}-u^{87}+\cdots+8558243u-2435537$
c_6, c_9	$u^{88}+3u^{87}+\cdots-1497u-181$
c_7, c_{11}	$u^{88}+2u^{87}+\cdots+4968u-1771$
c_{10}	$u^{88}-14u^{87}+\cdots-5848u+1043$
c_{12}	$u^{88}-4u^{87}+\cdots+2u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{88} + 48y^{87} + \cdots - 1539089020y + 5764801$
c_2, c_4	$y^{88} - 36y^{87} + \cdots - 9016y + 2401$
c_3, c_8	$y^{88} - 63y^{87} + \cdots - 10096214016y + 629407744$
c_5	$y^{88} + 33y^{87} + \cdots + 85934090519941y + 5931840478369$
c_6, c_9	$y^{88} + 49y^{87} + \cdots - 883509y + 32761$
c_7, c_{11}	$y^{88} + 70y^{87} + \cdots + 39623986y + 3136441$
c_{10}	$y^{88} + 2y^{87} + \cdots + 12594048y + 1087849$
c_{12}	$y^{88} - 16y^{87} + \cdots + 6y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.805310 + 0.589984I$ $a = 0.054018 - 0.595613I$ $b = -0.564062 + 0.307745I$	$-0.95191 - 5.34222I$	0
$u = 0.805310 - 0.589984I$ $a = 0.054018 + 0.595613I$ $b = -0.564062 - 0.307745I$	$-0.95191 + 5.34222I$	0
$u = -0.992163 + 0.083390I$ $a = 0.98711 + 1.32599I$ $b = 1.43776 + 0.20661I$	$-3.57000 + 4.86222I$	0
$u = -0.992163 - 0.083390I$ $a = 0.98711 - 1.32599I$ $b = 1.43776 - 0.20661I$	$-3.57000 - 4.86222I$	0
$u = -0.948677 + 0.240901I$ $a = 0.003868 - 0.312365I$ $b = 1.265110 - 0.356204I$	$4.48132 - 0.68778I$	0
$u = -0.948677 - 0.240901I$ $a = 0.003868 + 0.312365I$ $b = 1.265110 + 0.356204I$	$4.48132 + 0.68778I$	0
$u = -0.139706 + 0.952235I$ $a = -0.096405 + 1.302030I$ $b = 0.428123 + 0.474722I$	$-8.88186 + 0.52240I$	0
$u = -0.139706 - 0.952235I$ $a = -0.096405 - 1.302030I$ $b = 0.428123 - 0.474722I$	$-8.88186 - 0.52240I$	0
$u = -0.517483 + 0.776305I$ $a = 2.48790 - 5.29655I$ $b = -4.92316 + 0.17599I$	$-2.86090 + 2.57918I$	0
$u = -0.517483 - 0.776305I$ $a = 2.48790 + 5.29655I$ $b = -4.92316 - 0.17599I$	$-2.86090 - 2.57918I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.919116 + 0.059965I$ $a = 0.276517 - 0.504859I$ $b = -1.240560 - 0.144966I$	$4.06052 - 5.39830I$	0
$u = -0.919116 - 0.059965I$ $a = 0.276517 + 0.504859I$ $b = -1.240560 + 0.144966I$	$4.06052 + 5.39830I$	0
$u = 0.740792 + 0.830928I$ $a = 0.330688 + 0.146176I$ $b = -0.648519 + 0.066233I$	$-0.52740 - 2.78156I$	0
$u = 0.740792 - 0.830928I$ $a = 0.330688 - 0.146176I$ $b = -0.648519 - 0.066233I$	$-0.52740 + 2.78156I$	0
$u = 0.248018 + 0.848575I$ $a = 0.59296 + 1.67847I$ $b = -1.039260 - 0.222833I$	$-2.35191 - 3.21223I$	$-7.96555 + 6.35540I$
$u = 0.248018 - 0.848575I$ $a = 0.59296 - 1.67847I$ $b = -1.039260 + 0.222833I$	$-2.35191 + 3.21223I$	$-7.96555 - 6.35540I$
$u = 0.079212 + 1.132010I$ $a = -2.23389 - 0.84898I$ $b = 1.65660 + 0.78050I$	$2.28913 + 1.10084I$	0
$u = 0.079212 - 1.132010I$ $a = -2.23389 + 0.84898I$ $b = 1.65660 - 0.78050I$	$2.28913 - 1.10084I$	0
$u = -0.319029 + 1.102470I$ $a = -1.74887 + 0.76112I$ $b = 0.788989 - 0.262436I$	$6.66068 + 5.31014I$	0
$u = -0.319029 - 1.102470I$ $a = -1.74887 - 0.76112I$ $b = 0.788989 + 0.262436I$	$6.66068 - 5.31014I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.174859 + 0.815548I$ $a = -0.149816 + 0.368917I$ $b = 0.641340 - 0.280050I$	$1.08551 - 1.92358I$	$4.64840 + 3.23156I$
$u = 0.174859 - 0.815548I$ $a = -0.149816 - 0.368917I$ $b = 0.641340 + 0.280050I$	$1.08551 + 1.92358I$	$4.64840 - 3.23156I$
$u = 0.767240 + 0.896651I$ $a = -0.055340 + 0.668537I$ $b = 0.212608 - 0.126711I$	$-0.156171 - 0.447897I$	0
$u = 0.767240 - 0.896651I$ $a = -0.055340 - 0.668537I$ $b = 0.212608 + 0.126711I$	$-0.156171 + 0.447897I$	0
$u = -0.237078 + 0.779145I$ $a = -0.81168 - 1.26283I$ $b = -0.67193 + 1.62533I$	$-2.63864 + 1.15581I$	$-8.11133 + 0.I$
$u = -0.237078 - 0.779145I$ $a = -0.81168 + 1.26283I$ $b = -0.67193 - 1.62533I$	$-2.63864 - 1.15581I$	$-8.11133 + 0.I$
$u = 0.451795 + 1.101000I$ $a = 0.358681 + 0.343345I$ $b = -0.360929 - 0.818141I$	$0.22772 - 2.36626I$	0
$u = 0.451795 - 1.101000I$ $a = 0.358681 - 0.343345I$ $b = -0.360929 + 0.818141I$	$0.22772 + 2.36626I$	0
$u = -0.938892 + 0.789370I$ $a = 0.273538 - 0.331883I$ $b = 0.201529 - 0.414522I$	$-5.45148 - 0.98119I$	0
$u = -0.938892 - 0.789370I$ $a = 0.273538 + 0.331883I$ $b = 0.201529 + 0.414522I$	$-5.45148 + 0.98119I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.785869+0.950757I$ $a=-0.138404+0.139505I$ $b=-0.271984+0.082732I$	$-4.90136+7.25149I$	0
$u=-0.785869-0.950757I$ $a=-0.138404-0.139505I$ $b=-0.271984-0.082732I$	$-4.90136-7.25149I$	0
$u=-0.135066+1.254400I$ $a=\ \ 2.22121+0.15503I$ $b=-2.05694-0.67244I$	$1.84545+6.92325I$	0
$u=-0.135066-1.254400I$ $a=\ \ 2.22121-0.15503I$ $b=-2.05694+0.67244I$	$1.84545-6.92325I$	0
$u=-0.166697+1.254150I$ $a=-0.034446-0.623225I$ $b=-0.319789-0.663059I$	$1.34449+3.11057I$	0
$u=-0.166697-1.254150I$ $a=-0.034446+0.623225I$ $b=-0.319789+0.663059I$	$1.34449-3.11057I$	0
$u=-0.128440+1.272930I$ $a=\ \ 1.93796-0.20251I$ $b=-2.15691-0.51379I$	$1.74481+1.77274I$	0
$u=-0.128440-1.272930I$ $a=\ \ 1.93796+0.20251I$ $b=-2.15691+0.51379I$	$1.74481-1.77274I$	0
$u=\ \ 0.696650+0.064826I$ $a=\ \ 1.51721+1.08264I$ $b=\ \ 1.40952+0.93931I$	$-4.59376+2.75184I$	$-8.12364-4.75878I$
$u=\ \ 0.696650-0.064826I$ $a=\ \ 1.51721-1.08264I$ $b=\ \ 1.40952-0.93931I$	$-4.59376-2.75184I$	$-8.12364+4.75878I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.112427+1.300630I$ $a=\ \ 1.68962-0.37026I$ $b=-1.092740+0.486491I$	$8.28391-2.17535I$	0
$u=-0.112427-1.300630I$ $a=\ \ 1.68962+0.37026I$ $b=-1.092740-0.486491I$	$8.28391+2.17535I$	0
$u=\ \ 0.313929+1.278860I$ $a=-1.83698-0.13210I$ $b=\ \ 1.40992-1.21165I$	$-0.73301-6.46230I$	0
$u=\ \ 0.313929-1.278860I$ $a=-1.83698+0.13210I$ $b=\ \ 1.40992+1.21165I$	$-0.73301+6.46230I$	0
$u=\ \ 0.266726+1.305550I$ $a=-0.493116+0.134447I$ $b=\ \ 0.801100+0.630667I$	$3.68905-4.17717I$	0
$u=\ \ 0.266726-1.305550I$ $a=-0.493116-0.134447I$ $b=\ \ 0.801100-0.630667I$	$3.68905+4.17717I$	0
$u=\ \ 0.021756+1.350550I$ $a=\ \ 0.747687-0.219765I$ $b=-0.820694-0.756021I$	$2.82569+0.98099I$	0
$u=\ \ 0.021756-1.350550I$ $a=\ \ 0.747687+0.219765I$ $b=-0.820694+0.756021I$	$2.82569-0.98099I$	0
$u=-0.018865+0.638570I$ $a=\ \ 0.079600+0.747971I$ $b=\ \ 0.756230-0.701359I$	$0.93570-1.73737I$	$2.01048+1.71572I$
$u=-0.018865-0.638570I$ $a=\ \ 0.079600-0.747971I$ $b=\ \ 0.756230+0.701359I$	$0.93570+1.73737I$	$2.01048-1.71572I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.588985$ $a = 0.818540$ $b = -0.302376$	-1.64409	-5.83610
$u = 0.094002 + 0.577464I$ $a = -0.249160 - 1.294160I$ $b = -0.365512 + 1.099090I$	$-2.55730 + 1.15360I$	$-7.35870 + 0.72400I$
$u = 0.094002 - 0.577464I$ $a = -0.249160 + 1.294160I$ $b = -0.365512 - 1.099090I$	$-2.55730 - 1.15360I$	$-7.35870 - 0.72400I$
$u = -0.54155 + 1.31866I$ $a = 1.35023 - 0.95631I$ $b = -1.88027 + 0.08346I$	$7.90999 + 10.78390I$	0
$u = -0.54155 - 1.31866I$ $a = 1.35023 + 0.95631I$ $b = -1.88027 - 0.08346I$	$7.90999 - 10.78390I$	0
$u = -0.41333 + 1.36783I$ $a = 0.044748 + 0.458558I$ $b = 0.159156 + 0.689302I$	$1.05954 + 9.78750I$	0
$u = -0.41333 - 1.36783I$ $a = 0.044748 - 0.458558I$ $b = 0.159156 - 0.689302I$	$1.05954 - 9.78750I$	0
$u = 1.40756 + 0.26250I$ $a = -0.226308 + 0.033161I$ $b = -1.81552 + 0.07911I$	$1.45716 - 4.42701I$	0
$u = 1.40756 - 0.26250I$ $a = -0.226308 - 0.033161I$ $b = -1.81552 - 0.07911I$	$1.45716 + 4.42701I$	0
$u = -0.42686 + 1.41707I$ $a = -1.42953 + 0.73379I$ $b = 1.96059 + 0.05533I$	$9.65161 + 4.27098I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.42686 - 1.41707I$ $a = -1.42953 - 0.73379I$ $b = 1.96059 - 0.05533I$	$9.65161 - 4.27098I$	0
$u = 0.26866 + 1.45831I$ $a = 1.54716 + 0.09889I$ $b = -1.83374 + 0.14991I$	$5.43825 - 8.83857I$	0
$u = 0.26866 - 1.45831I$ $a = 1.54716 - 0.09889I$ $b = -1.83374 - 0.14991I$	$5.43825 + 8.83857I$	0
$u = 0.478957 + 0.175114I$ $a = 0.62555 + 1.48896I$ $b = -0.128706 - 0.360441I$	$-0.78467 - 1.23926I$	$-5.32242 + 5.47295I$
$u = 0.478957 - 0.175114I$ $a = 0.62555 - 1.48896I$ $b = -0.128706 + 0.360441I$	$-0.78467 + 1.23926I$	$-5.32242 - 5.47295I$
$u = 0.07800 + 1.49272I$ $a = -1.50386 + 0.09747I$ $b = 1.82804 + 0.09407I$	$8.16387 - 2.18472I$	0
$u = 0.07800 - 1.49272I$ $a = -1.50386 - 0.09747I$ $b = 1.82804 - 0.09407I$	$8.16387 + 2.18472I$	0
$u = 1.51183 + 0.01086I$ $a = 0.317761 - 0.182920I$ $b = 2.09380 + 0.13018I$	$0.06365 + 10.42840I$	0
$u = 1.51183 - 0.01086I$ $a = 0.317761 + 0.182920I$ $b = 2.09380 - 0.13018I$	$0.06365 - 10.42840I$	0
$u = -0.13980 + 1.52059I$ $a = -0.39445 + 1.40951I$ $b = 1.54870 - 3.66586I$	$1.66607 + 0.20314I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.13980 - 1.52059I$ $a = -0.39445 - 1.40951I$ $b = 1.54870 + 3.66586I$	$1.66607 - 0.20314I$	0
$u = 0.030492 + 0.449001I$ $a = 0.296509 - 1.156240I$ $b = -1.046570 + 0.812879I$	$-1.21942 - 6.06914I$	$-0.76059 - 2.63784I$
$u = 0.030492 - 0.449001I$ $a = 0.296509 + 1.156240I$ $b = -1.046570 - 0.812879I$	$-1.21942 + 6.06914I$	$-0.76059 + 2.63784I$
$u = 0.50465 + 1.51967I$ $a = 1.50482 + 0.37400I$ $b = -2.01643 + 0.96407I$	$7.20481 - 10.90700I$	0
$u = 0.50465 - 1.51967I$ $a = 1.50482 - 0.37400I$ $b = -2.01643 - 0.96407I$	$7.20481 + 10.90700I$	0
$u = -0.378884$ $a = -2.36935$ $b = -0.867969$	-2.22317	-0.252670
$u = 0.64911 + 1.49897I$ $a = -1.44538 - 0.56337I$ $b = 2.26266 - 0.99181I$	$4.8344 - 17.8080I$	0
$u = 0.64911 - 1.49897I$ $a = -1.44538 + 0.56337I$ $b = 2.26266 + 0.99181I$	$4.8344 + 17.8080I$	0
$u = -0.71431 + 1.53469I$ $a = 1.114620 - 0.373137I$ $b = -1.21769 - 1.82144I$	$7.13913 + 0.48203I$	0
$u = -0.71431 - 1.53469I$ $a = 1.114620 + 0.373137I$ $b = -1.21769 + 1.82144I$	$7.13913 - 0.48203I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.92191 + 1.43934I$ $a = -1.111690 + 0.636225I$ $b = 1.44949 + 1.78433I$	$6.56818 + 7.36505I$	0
$u = -0.92191 - 1.43934I$ $a = -1.111690 - 0.636225I$ $b = 1.44949 - 1.78433I$	$6.56818 - 7.36505I$	0
$u = -0.237720 + 0.158364I$ $a = -3.64518 - 2.93335I$ $b = -0.681565 - 0.621880I$	$-2.23495 - 1.29247I$	$-6.68617 - 1.38636I$
$u = -0.237720 - 0.158364I$ $a = -3.64518 + 2.93335I$ $b = -0.681565 + 0.621880I$	$-2.23495 + 1.29247I$	$-6.68617 + 1.38636I$
$u = 0.62041 + 1.63980I$ $a = 0.998177 + 0.582876I$ $b = -2.10790 + 0.42331I$	$6.07321 - 3.61773I$	0
$u = 0.62041 - 1.63980I$ $a = 0.998177 - 0.582876I$ $b = -2.10790 - 0.42331I$	$6.07321 + 3.61773I$	0
$u = 0.43998 + 1.83287I$ $a = -1.036670 - 0.340691I$ $b = 2.46384 - 0.76211I$	$6.26435 + 2.30308I$	0
$u = 0.43998 - 1.83287I$ $a = -1.036670 + 0.340691I$ $b = 2.46384 + 0.76211I$	$6.26435 - 2.30308I$	0

II. $I_2^u = \langle 4u^8+u^6-4u^5+2u^4-5u^3-u^2+7b+u+3,\ 4u^8+7u^7+\cdots+7a+3,\ u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-\frac{4}{7}u^8-u^7+\cdots-\frac{1}{7}u-\frac{3}{7}\\-\frac{4}{7}u^8-\frac{1}{7}u^6+\cdots-\frac{1}{7}u-\frac{3}{7}\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-\frac{4}{7}u^8-u^7+\cdots-\frac{1}{7}u-\frac{3}{7}\\-\frac{4}{7}u^8-\frac{1}{7}u^6+\cdots-\frac{1}{7}u-\frac{3}{7}\end{pmatrix}$$
$$a_9 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u^2+1\\u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u^4+u^2+1\\u^4\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u^8+u^6+u^4-1\\u^8+u^7+u^6+2u^5+u^4+2u^3+2u-1\end{pmatrix}$$
$$a_2 = \begin{pmatrix}\frac{3}{7}u^8-u^7+\cdots-\frac{1}{7}u-\frac{10}{7}\\\frac{3}{7}u^8+u^7+\cdots+\frac{13}{7}u-\frac{10}{7}\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-u^8-u^6-u^4+1\\-u^8-u^7-u^6-2u^5-u^4-2u^3-2u+1\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -\frac{5}{49}u^8-\frac{16}{7}u^7-\frac{241}{49}u^6-\frac{184}{49}u^5-\frac{307}{49}u^4-\frac{342}{49}u^3-\frac{361}{49}u^2+\frac{95}{49}u-\frac{618}{49}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^9$
c_3, c_8	u^9
c_4	$(u+1)^9$
c_5, c_{10}	$u^9 + u^8 - 2u^7 - 3u^6 + u^5 + 3u^4 + 2u^3 - u - 1$
c_6	$u^9 + 3u^8 + 8u^7 + 13u^6 + 17u^5 + 17u^4 + 12u^3 + 6u^2 + u - 1$
c_7	$u^9 + u^8 + 2u^7 + u^6 + 3u^5 + u^4 + 2u^3 + u - 1$
c_9	$u^9 - 3u^8 + 8u^7 - 13u^6 + 17u^5 - 17u^4 + 12u^3 - 6u^2 + u + 1$
c_{11}	$u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1$
c_{12}	$u^9 + 5u^8 + 12u^7 + 15u^6 + 9u^5 - u^4 - 4u^3 - 2u^2 + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^9$
c_3, c_8	y^9
c_5, c_{10}	$y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1$
c_6, c_9	$y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1$
c_7, c_{11}	$y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1$
c_{12}	$y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.140343 + 0.966856I$ $a = 0.903964 + 0.094390I$ $b = -0.852846 + 0.158943I$	$0.13850 - 2.09337I$	$-5.47770 + 4.24226I$
$u = 0.140343 - 0.966856I$ $a = 0.903964 - 0.094390I$ $b = -0.852846 - 0.158943I$	$0.13850 + 2.09337I$	$-5.47770 - 4.24226I$
$u = 0.628449 + 0.875112I$ $a = -0.53175 + 1.59553I$ $b = -1.55776 - 1.17662I$	$-2.26187 - 2.45442I$	$-3.78210 + 4.39771I$
$u = 0.628449 - 0.875112I$ $a = -0.53175 - 1.59553I$ $b = -1.55776 + 1.17662I$	$-2.26187 + 2.45442I$	$-3.78210 - 4.39771I$
$u = -0.796005 + 0.733148I$ $a = 0.476406 + 0.294981I$ $b = 0.390088 - 0.527698I$	$-6.01628 - 1.33617I$	$-12.84367 + 3.27176I$
$u = -0.796005 - 0.733148I$ $a = 0.476406 - 0.294981I$ $b = 0.390088 + 0.527698I$	$-6.01628 + 1.33617I$	$-12.84367 - 3.27176I$
$u = -0.728966 + 0.986295I$ $a = -0.352455 - 0.113243I$ $b = -0.007269 + 0.556797I$	$-5.24306 + 7.08493I$	$-15.6193 - 1.7431I$
$u = -0.728966 - 0.986295I$ $a = -0.352455 + 0.113243I$ $b = -0.007269 - 0.556797I$	$-5.24306 - 7.08493I$	$-15.6193 + 1.7431I$
$u = 0.512358$ $a = -1.42091$ $b = -0.373004$	-2.84338	-15.1670

III. $I^u_3 =$
$\langle -4u^{15}-30u^{13}+\cdots+b+8,\ 2u^{15}+14u^{13}+\cdots+a-7,\ u^{16}+8u^{14}+\cdots-3u+1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-2u^{15}-14u^{13}+\cdots-13u+7\\4u^{15}+30u^{13}+\cdots+18u-8\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-2u^{14}-14u^{12}+\cdots+3u-1\\2u^{15}+15u^{13}+\cdots+10u-6\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u^{15}-u^{14}+\cdots-5u+2\\u^{15}+8u^{13}+\cdots+10u-3\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u^{14}-7u^{12}+\cdots+5u-1\\u^{15}+8u^{13}+\cdots+10u-3\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-u^{15}-7u^{13}+\cdots-u-1\\-3u^{15}-u^{14}+\cdots-14u-1\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-3u^{15}+2u^{14}+\cdots-13u+3\\-u^{15}+u^{14}+\cdots-13u+4\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-u^{15}+u^{14}+\cdots-8u+4\\-2u^{15}-u^{14}+\cdots-11u-1\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-u^{15}-7u^{13}+\cdots+5u^2-u\\-3u^{15}-u^{14}+\cdots+17u^2-14u\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 35u^{15}+12u^{14}+275u^{13}-18u^{12}+898u^{11}-348u^{10}+1661u^9-964u^8+1955u^7-1160u^6+1383u^5-706u^4+579u^3-256u^2+146u-39$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{16} - 10u^{15} + \cdots - 7u + 1$
c_2	$u^{16} + 6u^{15} + \cdots - u + 1$
c_3	$u^{16} - 3u^{14} + \cdots - u + 1$
c_4	$u^{16} - 6u^{15} + \cdots + u + 1$
c_5	$u^{16} + 3u^{15} + \cdots + 6u + 1$
c_6	$u^{16} + 3u^{15} + \cdots + 8u^2 + 1$
c_7	$u^{16} + 8u^{14} + \cdots - 3u + 1$
c_8	$u^{16} - 3u^{14} + \cdots + u + 1$
c_9	$u^{16} - 3u^{15} + \cdots + 8u^2 + 1$
c_{10}	$u^{16} - 5u^{13} + \cdots - 5u + 1$
c_{11}	$u^{16} + 8u^{14} + \cdots + 3u + 1$
c_{12}	$u^{16} - 6u^{15} + \cdots - 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{16} - 2y^{15} + \cdots + 61y + 1$
c_2, c_4	$y^{16} - 10y^{15} + \cdots - 7y + 1$
c_3, c_8	$y^{16} - 6y^{15} + \cdots + 9y + 1$
c_5	$y^{16} - 5y^{15} + \cdots - 14y + 1$
c_6, c_9	$y^{16} + 11y^{15} + \cdots + 16y + 1$
c_7, c_{11}	$y^{16} + 16y^{15} + \cdots + 11y + 1$
c_{10}	$y^{16} + 10y^{14} + \cdots + 9y + 1$
c_{12}	$y^{16} - 14y^{15} + \cdots - 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.192282 + 1.004160I$ $a = -0.054945 - 1.233160I$ $b = 0.391316 - 0.450641I$	$-8.83850 - 0.76161I$	$-4.2680 + 18.7238I$
$u = 0.192282 - 1.004160I$ $a = -0.054945 + 1.233160I$ $b = 0.391316 + 0.450641I$	$-8.83850 + 0.76161I$	$-4.2680 - 18.7238I$
$u = 0.405160 + 0.782797I$ $a = -0.41658 + 1.39011I$ $b = -0.522604 - 0.259087I$	$-1.72004 - 2.39298I$	$-3.94028 + 2.30129I$
$u = 0.405160 - 0.782797I$ $a = -0.41658 - 1.39011I$ $b = -0.522604 + 0.259087I$	$-1.72004 + 2.39298I$	$-3.94028 - 2.30129I$
$u = -0.380479 + 0.681918I$ $a = -3.58192 - 6.22555I$ $b = -2.28948 + 4.19034I$	$-2.96721 + 2.98693I$	$-21.6572 + 12.8409I$
$u = -0.380479 - 0.681918I$ $a = -3.58192 + 6.22555I$ $b = -2.28948 - 4.19034I$	$-2.96721 - 2.98693I$	$-21.6572 - 12.8409I$
$u = 0.445295 + 0.521652I$ $a = -1.043710 + 0.252877I$ $b = 0.938529 - 0.582515I$	$0.00207 - 2.08322I$	$-6.76763 + 3.46484I$
$u = 0.445295 - 0.521652I$ $a = -1.043710 - 0.252877I$ $b = 0.938529 + 0.582515I$	$0.00207 + 2.08322I$	$-6.76763 - 3.46484I$
$u = 0.279505 + 0.496867I$ $a = 0.739008 - 0.233492I$ $b = -1.056140 + 0.735456I$	$-1.36164 - 6.43556I$	$-8.1558 + 16.1878I$
$u = 0.279505 - 0.496867I$ $a = 0.739008 + 0.233492I$ $b = -1.056140 - 0.735456I$	$-1.36164 + 6.43556I$	$-8.1558 - 16.1878I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.08961 + 1.47734I$ $a = 0.703553 - 0.688380I$ $b = -1.15108 + 2.45886I$	$1.50817 - 0.70603I$	$-8.36846 + 5.87842I$
$u = 0.08961 - 1.47734I$ $a = 0.703553 + 0.688380I$ $b = -1.15108 - 2.45886I$	$1.50817 + 0.70603I$	$-8.36846 - 5.87842I$
$u = -0.60082 + 1.36455I$ $a = 1.40109 - 0.55373I$ $b = -1.40464 - 0.96198I$	$6.18219 + 6.62853I$	$-4.79477 - 3.23115I$
$u = -0.60082 - 1.36455I$ $a = 1.40109 + 0.55373I$ $b = -1.40464 + 0.96198I$	$6.18219 - 6.62853I$	$-4.79477 + 3.23115I$
$u = -0.43055 + 1.58967I$ $a = -1.246490 + 0.210919I$ $b = 1.59410 + 1.15005I$	$7.19496 - 0.24679I$	$-1.04785 + 3.22477I$
$u = -0.43055 - 1.58967I$ $a = -1.246490 - 0.210919I$ $b = 1.59410 - 1.15005I$	$7.19496 + 0.24679I$	$-1.04785 - 3.22477I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^{16}-10u^{15}+\cdots-7u+1)$ $\cdot(u^{88}+36u^{87}+\cdots+9016u+2401)$
c_2	$((u-1)^9)(u^{16}+6u^{15}+\cdots-u+1)(u^{88}-16u^{87}+\cdots+504u-49)$
c_3	$u^9(u^{16}-3u^{14}+\cdots-u+1)(u^{88}+u^{87}+\cdots+14336u+25088)$
c_4	$((u+1)^9)(u^{16}-6u^{15}+\cdots+u+1)(u^{88}-16u^{87}+\cdots+504u-49)$
c_5	$(u^9+u^8+\cdots-u-1)(u^{16}+3u^{15}+\cdots+6u+1)$ $\cdot(u^{88}-u^{87}+\cdots+8558243u-2435537)$
c_6	$(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{16}+3u^{15}+\cdots+8u^2+1)(u^{88}+3u^{87}+\cdots-1497u-181)$
c_7	$(u^9+u^8+\cdots+u-1)(u^{16}+8u^{14}+\cdots-3u+1)$ $\cdot(u^{88}+2u^{87}+\cdots+4968u-1771)$
c_8	$u^9(u^{16}-3u^{14}+\cdots+u+1)(u^{88}+u^{87}+\cdots+14336u+25088)$
c_9	$(u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1)$ $\cdot(u^{16}-3u^{15}+\cdots+8u^2+1)(u^{88}+3u^{87}+\cdots-1497u-181)$
c_{10}	$(u^9+u^8+\cdots-u-1)(u^{16}-5u^{13}+\cdots-5u+1)$ $\cdot(u^{88}-14u^{87}+\cdots-5848u+1043)$
c_{11}	$(u^9-u^8+\cdots+u+1)(u^{16}+8u^{14}+\cdots+3u+1)$ $\cdot(u^{88}+2u^{87}+\cdots+4968u-1771)$
c_{12}	$(u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1)$ $\cdot(u^{16}-6u^{15}+\cdots-3u+1)(u^{88}-4u^{87}+\cdots+2u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^{16}-2y^{15}+\cdots+61y+1)$ $\cdot(y^{88}+48y^{87}+\cdots-1539089020y+5764801)$
c_2, c_4	$((y-1)^9)(y^{16}-10y^{15}+\cdots-7y+1)$ $\cdot(y^{88}-36y^{87}+\cdots-9016y+2401)$
c_3, c_8	$y^9(y^{16}-6y^{15}+\cdots+9y+1)$ $\cdot(y^{88}-63y^{87}+\cdots-10096214016y+629407744)$
c_5	$(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{16}-5y^{15}+\cdots-14y+1)$ $\cdot(y^{88}+33y^{87}+\cdots+85934090519941y+5931840478369)$
c_6, c_9	$(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)$ $\cdot(y^{16}+11y^{15}+\cdots+16y+1)(y^{88}+49y^{87}+\cdots-883509y+32761)$
c_7, c_{11}	$(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot(y^{16}+16y^{15}+\cdots+11y+1)$ $\cdot(y^{88}+70y^{87}+\cdots+39623986y+3136441)$
c_{10}	$(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{16}+10y^{14}+\cdots+9y+1)$ $\cdot(y^{88}+2y^{87}+\cdots+12594048y+1087849)$
c_{12}	$(y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1)$ $\cdot(y^{16}-14y^{15}+\cdots-5y+1)(y^{88}-16y^{87}+\cdots+6y+1)$