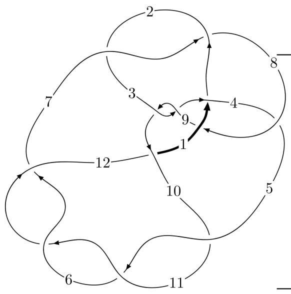
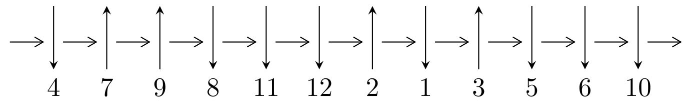
$12a_{1045}$ ($K12a_{1045}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -233u^{29} + 1283u^{28} + \cdots + 4b - 1220,\ -533u^{29} + 2893u^{28} + \cdots + 8a - 2692,$$
$$u^{30} - 7u^{29} + \cdots - 4u - 8\rangle$$
$$I_2^u = \langle 4.20118 \times 10^{22}a^5u^{10} + 5.48121 \times 10^{23}a^4u^{10} + \cdots + 3.93261 \times 10^{24}a - 4.34401 \times 10^{24},$$
$$u^{10}a^5 + 5u^{10}a^4 + \cdots + 5a - 3,\ u^{11} + u^{10} - 6u^9 - 5u^8 + 12u^7 + 6u^6 - 10u^5 + u^4 + 5u^3 - u^2 + 1\rangle$$
$$I_3^u = \langle -u^{14} + 2u^{13} + 8u^{12} - 15u^{11} - 24u^{10} + 39u^9 + 36u^8 - 38u^7 - 37u^6 + 8u^5 + 32u^4 - 12u^2 + b - 2u + 2,$$
$$-2u^{14} + 2u^{13} + \cdots + a + 2,$$
$$u^{16} - 10u^{14} + 39u^{12} + u^{11} - 74u^{10} - 8u^9 + 71u^8 + 23u^7 - 38u^6 - 28u^5 + 18u^4 + 13u^3 - 4u^2 - 2u + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 112 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. $\boldsymbol{I_1^u = \langle -233u^{29} + 1283u^{28} + \cdots + 4b - 1220,\ -533u^{29} + 2893u^{28} + \cdots + 8a - 2692,\ u^{30} - 7u^{29} + \cdots - 4u - 8\rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 66.6250u^{29} - 361.625u^{28} + \cdots + 373.250u + 336.500 \\ \frac{233}{4}u^{29} - \frac{1283}{4}u^{28} + \cdots + 349u + 305 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 22.3750u^{29} - 127.875u^{28} + \cdots + 160.250u + 131.500 \\ -\frac{31}{4}u^{29} + \frac{157}{4}u^{28} + \cdots - 31u - 31 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} u^5 - 2u^3 - u \\ u^5 - 3u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{41}{8}u^{29} - \frac{289}{8}u^{28} + \cdots + \frac{329}{4}u + 56 \\ -\frac{53}{4}u^{29} + \frac{261}{4}u^{28} + \cdots - \frac{71}{2}u - 43 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{197}{8}u^{29} - \frac{1045}{8}u^{28} + \cdots + \frac{489}{4}u + 114 \\ \frac{49}{4}u^{29} - \frac{265}{4}u^{28} + \cdots + \frac{129}{2}u + 59 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{109}{8}u^{29} - \frac{571}{8}u^{28} + \cdots + 65u + 64 \\ \frac{63}{2}u^{29} - 173u^{28} + \cdots + \frac{381}{2}u + 165 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -43u^{29} + 233u^{28} + 24u^{27} - 2066u^{26} + 1935u^{25} + 7589u^{24} - 8992u^{23} - 18142u^{22} + 17380u^{21} + 37598u^{20} - 16730u^{19} - 60970u^{18} - 3411u^{17} + 65829u^{16} + 39349u^{15} - 41950u^{14} - 51488u^{13} - 4016u^{12} + 34851u^{11} + 20846u^{10} - 921u^9 - 13945u^8 - 6633u^7 - 1648u^6 + 2861u^5 + 1809u^4 + 1337u^3 - 166u^2 - 248u - 210$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{30} - 27u^{29} + \cdots - 36864u + 2048$
c_2, c_3, c_7 c_9	$u^{30} + 11u^{28} + \cdots + u - 1$
c_4, c_8	$u^{30} + u^{29} + \cdots - 2u - 1$
c_5, c_6, c_{10} c_{11}	$u^{30} + 7u^{29} + \cdots + 4u - 8$
c_{12}	$u^{30} - 7u^{29} + \cdots + 56384u - 20992$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{30} - 9y^{29} + \cdots - 48234496y + 4194304$
c_2, c_3, c_7 c_9	$y^{30} + 22y^{29} + \cdots - 11y + 1$
c_4, c_8	$y^{30} + 3y^{29} + \cdots + 12y + 1$
c_5, c_6, c_{10} c_{11}	$y^{30} - 33y^{29} + \cdots - 16y + 64$
c_{12}	$y^{30} + 3y^{29} + \cdots - 206688256y + 440664064$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.863405+0.530291I$ $a=-0.684999+0.008143I$ $b=-0.897675+1.001320I$	$-3.01285+5.42239I$	$-5.0249-13.7215I$
$u=-0.863405-0.530291I$ $a=-0.684999-0.008143I$ $b=-0.897675-1.001320I$	$-3.01285-5.42239I$	$-5.0249+13.7215I$
$u=-0.731476+0.568139I$ $a=\ \ 1.114310+0.365338I$ $b=\ \ 1.56285-1.21446I$	$-6.0916+13.9505I$	$-9.16482-9.63284I$
$u=-0.731476-0.568139I$ $a=\ \ 1.114310-0.365338I$ $b=\ \ 1.56285+1.21446I$	$-6.0916-13.9505I$	$-9.16482+9.63284I$
$u=\ \ 1.051940+0.292196I$ $a=-0.289301-1.130000I$ $b=\ \ 0.373374-0.058569I$	$-8.43524+6.26787I$	$-11.74379-3.92525I$
$u=\ \ 1.051940-0.292196I$ $a=-0.289301+1.130000I$ $b=\ \ 0.373374+0.058569I$	$-8.43524-6.26787I$	$-11.74379+3.92525I$
$u=-0.484434+0.766175I$ $a=-0.062606-0.648073I$ $b=-0.985885+0.008839I$	$-1.10337+2.52152I$	$-5.89538-5.05949I$
$u=-0.484434-0.766175I$ $a=-0.062606+0.648073I$ $b=-0.985885-0.008839I$	$-1.10337-2.52152I$	$-5.89538+5.05949I$
$u=-0.548147+0.512523I$ $a=-0.706260+0.439855I$ $b=\ \ 0.058759+1.016530I$	$2.18720+3.47846I$	$-0.09259-5.90060I$
$u=-0.548147-0.512523I$ $a=-0.706260-0.439855I$ $b=\ \ 0.058759-1.016530I$	$2.18720-3.47846I$	$-0.09259+5.90060I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.192741 + 0.695844I$ $a = -1.071720 + 0.672690I$ $b = 0.921075 + 0.862157I$	$-4.48729 - 9.71321I$	$-6.59814 + 5.23923I$
$u = -0.192741 - 0.695844I$ $a = -1.071720 - 0.672690I$ $b = 0.921075 - 0.862157I$	$-4.48729 + 9.71321I$	$-6.59814 - 5.23923I$
$u = -0.388423 + 0.514575I$ $a = 0.941435 + 0.297487I$ $b = 0.530431 - 0.779112I$	$2.64855 + 0.09639I$	$1.44482 - 2.17887I$
$u = -0.388423 - 0.514575I$ $a = 0.941435 - 0.297487I$ $b = 0.530431 + 0.779112I$	$2.64855 - 0.09639I$	$1.44482 + 2.17887I$
$u = 0.106548 + 0.589026I$ $a = 0.822013 + 0.171417I$ $b = -0.283998 - 0.456801I$	$-0.17771 - 1.54871I$	$-0.18007 + 2.74695I$
$u = 0.106548 - 0.589026I$ $a = 0.822013 - 0.171417I$ $b = -0.283998 + 0.456801I$	$-0.17771 + 1.54871I$	$-0.18007 - 2.74695I$
$u = 0.596209$ $a = 0.544746$ $b = -0.131144$	-1.09004	-8.37530
$u = 1.41655 + 0.25699I$ $a = -0.808360 + 0.799987I$ $b = -0.800464 + 0.038413I$	$-7.16962 - 6.25363I$	$-10.89356 + 7.51977I$
$u = 1.41655 - 0.25699I$ $a = -0.808360 - 0.799987I$ $b = -0.800464 - 0.038413I$	$-7.16962 + 6.25363I$	$-10.89356 - 7.51977I$
$u = 1.48803 + 0.08948I$ $a = 1.73464 + 0.05380I$ $b = 1.236300 + 0.345342I$	$-3.44648 - 2.04173I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.48803 - 0.08948I$ $a = 1.73464 - 0.05380I$ $b = 1.236300 - 0.345342I$	$-3.44648 + 2.04173I$	0
$u = 1.54359 + 0.14330I$ $a = -0.818557 - 1.014570I$ $b = -0.366568 - 1.075300I$	$-4.79663 - 5.82343I$	0
$u = 1.54359 - 0.14330I$ $a = -0.818557 + 1.014570I$ $b = -0.366568 + 1.075300I$	$-4.79663 + 5.82343I$	0
$u = -1.55904$ $a = -0.0976328$ $b = -0.389520$	-8.42781	-9.45490
$u = 1.61572 + 0.17130I$ $a = 2.49295 + 0.48824I$ $b = 2.22027 + 1.42432I$	$-14.0241 - 16.7372I$	0
$u = 1.61572 - 0.17130I$ $a = 2.49295 - 0.48824I$ $b = 2.22027 - 1.42432I$	$-14.0241 + 16.7372I$	0
$u = 1.65106 + 0.16927I$ $a = -1.69282 - 0.62506I$ $b = -1.52761 - 1.31367I$	$-11.5587 - 8.1943I$	0
$u = 1.65106 - 0.16927I$ $a = -1.69282 + 0.62506I$ $b = -1.52761 + 1.31367I$	$-11.5587 + 8.1943I$	0
$u = -1.68340 + 0.03101I$ $a = 0.055719 - 0.237640I$ $b = 0.219463 - 1.080790I$	$-18.0199 - 5.2960I$	0
$u = -1.68340 - 0.03101I$ $a = 0.055719 + 0.237640I$ $b = 0.219463 + 1.080790I$	$-18.0199 + 5.2960I$	0

II. $\boldsymbol{I_2^u = \langle 4.20 \times 10^{22} a^5 u^{10} + 5.48 \times 10^{23} a^4 u^{10} + \cdots + 3.93 \times 10^{24} a - 4.34 \times 10^{24},\ u^{10} a^5 + 5u^{10} a^4 + \cdots + 5a - 3,\ u^{11} + u^{10} + \cdots - u^2 + 1 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a \\ -0.0109737a^5u^{10} - 0.143173a^4u^{10} + \cdots - 1.02722a + 1.13468 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.289631a^5u^{10} + 0.0720661a^4u^{10} + \cdots + 2.24758a - 1.87380 \\ -0.170540a^5u^{10} - 0.00192749a^4u^{10} + \cdots - 2.50277a + 1.80562 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^5 - 2u^3 - u \\ u^5 - 3u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.0463446a^5u^{10} - 0.288499a^4u^{10} + \cdots + 0.353993a + 0.712997 \\ 0.0951316a^5u^{10} + 0.324793a^4u^{10} + \cdots + 0.766226a - 0.234285 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.411421a^5u^{10} - 0.796302a^4u^{10} + \cdots + 4.25520a + 0.348645 \\ -0.172791a^5u^{10} - 0.332111a^4u^{10} + \cdots + 2.55867a + 0.0689042 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.111913a^5u^{10} + 0.159796a^4u^{10} + \cdots + 2.46208a - 1.16610 \\ -0.0138058a^5u^{10} + 0.289442a^4u^{10} + \cdots - 3.84499a + 1.05137 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{171513547906236962812357 6}{3828394842862113157330195} u^{10} a^5 - \frac{4546409628585104976314936}{3828394842862113157330195} u^{10} a^4 + \cdots + \frac{1584654246394472342983472}{1664519496896570937969 65} a - \frac{2916324425140267745945175 8}{3828394842862113157330195}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^3+u^2-1)^{22}$
c_2, c_3, c_7 c_9	$u^{66}+u^{65}+\cdots-2096u+1357$
c_4, c_8	$u^{66}+3u^{65}+\cdots-56u+7$
c_5, c_6, c_{10} c_{11}	$(u^{11}-u^{10}-6u^9+5u^8+12u^7-6u^6-10u^5-u^4+5u^3+u^2-1)^6$
c_{12}	$(u^{11}-3u^{10}+4u^9-u^8+2u^7-8u^6+8u^5+5u^4-3u^3-u^2+4u-1)^6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^3 - y^2 + 2y - 1)^{22}$
c_2, c_3, c_7 c_9	$y^{66} + 51y^{65} + \cdots + 63245092y + 1841449$
c_4, c_8	$y^{66} - 17y^{65} + \cdots - 4396y + 49$
c_5, c_6, c_{10} c_{11}	$(y^{11} - 13y^{10} + \cdots + 2y - 1)^6$
c_{12}	$(y^{11} - y^{10} + \cdots + 14y - 1)^6$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.662234 + 0.478506I$ $a = 0.934868 + 0.422288I$ $b = 0.138257 + 0.380396I$	$-1.53399 - 1.92218I$	$-7.13133 + 3.79746I$
$u = 0.662234 + 0.478506I$ $a = 1.223350 - 0.359827I$ $b = 1.88847 + 0.88733I$	$-5.67157 - 4.75030I$	$-13.6606 + 6.7769I$
$u = 0.662234 + 0.478506I$ $a = 0.551933 - 0.066130I$ $b = 1.08015 + 1.46331I$	$-1.53399 - 7.57843I$	$-7.13133 + 9.75635I$
$u = 0.662234 + 0.478506I$ $a = 0.007189 + 0.448719I$ $b = -0.699910 - 0.628392I$	$-1.53399 - 1.92218I$	$-7.13133 + 3.79746I$
$u = 0.662234 + 0.478506I$ $a = -1.52726 + 0.82052I$ $b = -1.82243 - 1.14304I$	$-5.67157 - 4.75030I$	$-13.6606 + 6.7769I$
$u = 0.662234 + 0.478506I$ $a = -1.72340 - 0.45711I$ $b = -0.46865 - 1.40835I$	$-1.53399 - 7.57843I$	$-7.13133 + 9.75635I$
$u = 0.662234 - 0.478506I$ $a = 0.934868 - 0.422288I$ $b = 0.138257 - 0.380396I$	$-1.53399 + 1.92218I$	$-7.13133 - 3.79746I$
$u = 0.662234 - 0.478506I$ $a = 1.223350 + 0.359827I$ $b = 1.88847 - 0.88733I$	$-5.67157 + 4.75030I$	$-13.6606 - 6.7769I$
$u = 0.662234 - 0.478506I$ $a = 0.551933 + 0.066130I$ $b = 1.08015 - 1.46331I$	$-1.53399 + 7.57843I$	$-7.13133 - 9.75635I$
$u = 0.662234 - 0.478506I$ $a = 0.007189 - 0.448719I$ $b = -0.699910 + 0.628392I$	$-1.53399 + 1.92218I$	$-7.13133 - 3.79746I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.662234 - 0.478506I$ $a = -1.52726 - 0.82052I$ $b = -1.82243 + 1.14304I$	$-5.67157 + 4.75030I$	$-13.6606 - 6.7769I$
$u = 0.662234 - 0.478506I$ $a = -1.72340 + 0.45711I$ $b = -0.46865 + 1.40835I$	$-1.53399 + 7.57843I$	$-7.13133 - 9.75635I$
$u = -0.662125 + 0.223569I$ $a = -1.123710 - 0.254463I$ $b = -0.91051 + 1.39920I$	$-3.20064 + 3.28289I$	$-11.68532 - 4.34902I$
$u = -0.662125 + 0.223569I$ $a = -0.95595 + 1.21392I$ $b = -0.263894 - 0.684965I$	$-7.33822 + 0.45477I$	$-18.2146 - 1.3696I$
$u = -0.662125 + 0.223569I$ $a = -1.07397 + 1.39738I$ $b = -0.804376 + 0.943483I$	$-3.20064 + 3.28289I$	$-11.68532 - 4.34902I$
$u = -0.662125 + 0.223569I$ $a = 0.042624 - 0.209370I$ $b = 0.70963 - 1.51244I$	$-3.20064 - 2.37336I$	$-11.68532 + 1.60987I$
$u = -0.662125 + 0.223569I$ $a = 0.31735 - 2.06691I$ $b = -0.850230 + 0.120691I$	$-7.33822 + 0.45477I$	$-18.2146 - 1.3696I$
$u = -0.662125 + 0.223569I$ $a = 1.67299 - 1.57745I$ $b = 0.164226 - 1.256190I$	$-3.20064 - 2.37336I$	$-11.68532 + 1.60987I$
$u = -0.662125 - 0.223569I$ $a = -1.123710 + 0.254463I$ $b = -0.91051 - 1.39920I$	$-3.20064 - 3.28289I$	$-11.68532 + 4.34902I$
$u = -0.662125 - 0.223569I$ $a = -0.95595 - 1.21392I$ $b = -0.263894 + 0.684965I$	$-7.33822 - 0.45477I$	$-18.2146 + 1.3696I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.662125 - 0.223569I$ $a = -1.07397 - 1.39738I$ $b = -0.804376 - 0.943483I$	$-3.20064 - 3.28289I$	$-11.68532 + 4.34902I$
$u = -0.662125 - 0.223569I$ $a = 0.042624 + 0.209370I$ $b = 0.70963 + 1.51244I$	$-3.20064 + 2.37336I$	$-11.68532 - 1.60987I$
$u = -0.662125 - 0.223569I$ $a = 0.31735 + 2.06691I$ $b = -0.850230 - 0.120691I$	$-7.33822 - 0.45477I$	$-18.2146 + 1.3696I$
$u = -0.662125 - 0.223569I$ $a = 1.67299 + 1.57745I$ $b = 0.164226 + 1.256190I$	$-3.20064 + 2.37336I$	$-11.68532 - 1.60987I$
$u = 0.227048 + 0.520535I$ $a = 0.931590 + 0.011281I$ $b = -0.007048 - 0.213343I$	$-0.27441 - 1.55271I$	$-3.01079 + 2.17848I$
$u = 0.227048 + 0.520535I$ $a = 0.554947 + 0.626306I$ $b = -0.475444 - 0.493727I$	$-0.27441 - 1.55271I$	$-3.01079 + 2.17848I$
$u = 0.227048 + 0.520535I$ $a = 0.702189 - 0.345504I$ $b = -0.022101 + 1.400790I$	$-0.27441 + 4.10353I$	$-3.01079 - 3.78041I$
$u = 0.227048 + 0.520535I$ $a = 1.40227 + 1.03949I$ $b = -1.16636 + 1.00757I$	$-4.41199 + 1.27541I$	$-9.54006 - 0.80097I$
$u = 0.227048 + 0.520535I$ $a = -1.02782 - 1.62593I$ $b = 0.832545 - 0.852154I$	$-4.41199 + 1.27541I$	$-9.54006 - 0.80097I$
$u = 0.227048 + 0.520535I$ $a = -1.90607 - 0.73477I$ $b = 0.252604 - 0.576397I$	$-0.27441 + 4.10353I$	$-3.01079 - 3.78041I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.227048 - 0.520535I$ $a = 0.931590 - 0.011281I$ $b = -0.007048 + 0.213343I$	$-0.27441 + 1.55271I$	$-3.01079 - 2.17848I$
$u = 0.227048 - 0.520535I$ $a = 0.554947 - 0.626306I$ $b = -0.475444 + 0.493727I$	$-0.27441 + 1.55271I$	$-3.01079 - 2.17848I$
$u = 0.227048 - 0.520535I$ $a = 0.702189 + 0.345504I$ $b = -0.022101 - 1.400790I$	$-0.27441 - 4.10353I$	$-3.01079 + 3.78041I$
$u = 0.227048 - 0.520535I$ $a = 1.40227 - 1.03949I$ $b = -1.16636 - 1.00757I$	$-4.41199 - 1.27541I$	$-9.54006 + 0.80097I$
$u = 0.227048 - 0.520535I$ $a = -1.02782 + 1.62593I$ $b = 0.832545 + 0.852154I$	$-4.41199 - 1.27541I$	$-9.54006 + 0.80097I$
$u = 0.227048 - 0.520535I$ $a = -1.90607 + 0.73477I$ $b = 0.252604 + 0.576397I$	$-0.27441 - 4.10353I$	$-3.01079 + 3.78041I$
$u = -1.45917$ $a = -1.45609 + 0.39286I$ $b = -1.068350 - 0.300580I$	$-5.29325 - 2.82812I$	$-6.67597 + 2.97945I$
$u = -1.45917$ $a = -1.45609 - 0.39286I$ $b = -1.068350 + 0.300580I$	$-5.29325 + 2.82812I$	$-6.67597 - 2.97945I$
$u = -1.45917$ $a = 1.39251 + 0.77924I$ $b = 0.840217 + 1.085890I$	$-5.29325 + 2.82812I$	$-6.67597 - 2.97945I$
$u = -1.45917$ $a = 1.39251 - 0.77924I$ $b = 0.840217 - 1.085890I$	$-5.29325 - 2.82812I$	$-6.67597 + 2.97945I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.45917$ $a=-0.08422+2.05292I$ $b=-0.302211+1.375460I$	-9.43083	$-13.20523+0.I$
$u=-1.45917$ $a=-0.08422-2.05292I$ $b=-0.302211-1.375460I$	-9.43083	$-13.20523+0.I$
$u=\ 1.59518+0.07553I$ $a=-0.479187+1.086150I$ $b=-0.36591+1.99115I$	$-15.0869-1.6459I$	$-19.0694+0.2448I$
$u=\ 1.59518+0.07553I$ $a=-0.676526+0.440145I$ $b=-0.977261-0.741957I$	$-15.0869-1.6459I$	$-19.0694+0.2448I$
$u=\ 1.59518+0.07553I$ $a=\ 1.38900+1.45328I$ $b=\ 0.636912+1.068200I$	$-10.94930+1.18219I$	$-12.54012-2.73464I$
$u=\ 1.59518+0.07553I$ $a=-1.96346-0.87103I$ $b=-1.71735-0.61499I$	$-10.94930-4.47405I$	$-12.54012+3.22425I$
$u=\ 1.59518+0.07553I$ $a=-1.97389-1.20394I$ $b=-1.65511-1.99458I$	$-10.94930-4.47405I$	$-12.54012+3.22425I$
$u=\ 1.59518+0.07553I$ $a=\ 1.67593+1.77387I$ $b=\ 1.72161+2.48435I$	$-10.94930+1.18219I$	$-12.54012-2.73464I$
$u=\ 1.59518-0.07553I$ $a=-0.479187-1.086150I$ $b=-0.36591-1.99115I$	$-15.0869+1.6459I$	$-19.0694-0.2448I$
$u=\ 1.59518-0.07553I$ $a=-0.676526-0.440145I$ $b=-0.977261+0.741957I$	$-15.0869+1.6459I$	$-19.0694-0.2448I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.59518 - 0.07553I$ $a = 1.38900 - 1.45328I$ $b = 0.636912 - 1.068200I$	$-10.94930 - 1.18219I$	$-12.54012 + 2.73464I$
$u = 1.59518 - 0.07553I$ $a = -1.96346 + 0.87103I$ $b = -1.71735 + 0.61499I$	$-10.94930 + 4.47405I$	$-12.54012 - 3.22425I$
$u = 1.59518 - 0.07553I$ $a = -1.97389 + 1.20394I$ $b = -1.65511 + 1.99458I$	$-10.94930 + 4.47405I$	$-12.54012 - 3.22425I$
$u = 1.59518 - 0.07553I$ $a = 1.67593 - 1.77387I$ $b = 1.72161 - 2.48435I$	$-10.94930 - 1.18219I$	$-12.54012 + 2.73464I$
$u = -1.59275 + 0.13764I$ $a = 1.032850 - 0.269531I$ $b = 0.600929 - 0.112763I$	$-9.17552 + 4.19407I$	$-9.99079 - 1.90674I$
$u = -1.59275 + 0.13764I$ $a = -1.227410 + 0.533552I$ $b = -1.24859 + 1.31015I$	$-9.17552 + 4.19407I$	$-9.99079 - 1.90674I$
$u = -1.59275 + 0.13764I$ $a = -1.78851 + 1.15092I$ $b = -0.90600 + 1.26674I$	$-9.17552 + 9.85032I$	$-9.99079 - 7.86564I$
$u = -1.59275 + 0.13764I$ $a = 2.05740 - 1.33869I$ $b = 1.90317 - 2.19348I$	$-9.17552 + 9.85032I$	$-9.99079 - 7.86564I$
$u = -1.59275 + 0.13764I$ $a = -2.86939 + 0.22585I$ $b = -2.41596 + 1.21947I$	$-13.3131 + 7.0222I$	$-16.5201 - 4.8862I$
$u = -1.59275 + 0.13764I$ $a = 2.96787 - 0.12483I$ $b = 2.87897 - 0.86094I$	$-13.3131 + 7.0222I$	$-16.5201 - 4.8862I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.59275-0.13764I$ $a=1.032850+0.269531I$ $b=0.600929+0.112763I$	$-9.17552-4.19407I$	$-9.99079+1.90674I$
$u=-1.59275-0.13764I$ $a=-1.227410-0.533552I$ $b=-1.24859-1.31015I$	$-9.17552-4.19407I$	$-9.99079+1.90674I$
$u=-1.59275-0.13764I$ $a=-1.78851-1.15092I$ $b=-0.90600-1.26674I$	$-9.17552-9.85032I$	$-9.99079+7.86564I$
$u=-1.59275-0.13764I$ $a=2.05740+1.33869I$ $b=1.90317+2.19348I$	$-9.17552-9.85032I$	$-9.99079+7.86564I$
$u=-1.59275-0.13764I$ $a=-2.86939-0.22585I$ $b=-2.41596-1.21947I$	$-13.3131-7.0222I$	$-16.5201+4.8862I$
$u=-1.59275-0.13764I$ $a=2.96787+0.12483I$ $b=2.87897+0.86094I$	$-13.3131-7.0222I$	$-16.5201+4.8862I$

III. $\boldsymbol{I_3^u =}$
$\boldsymbol{\langle -u^{14}+2u^{13}+\cdots+b+2,\ -2u^{14}+2u^{13}+\cdots+a+2,\ u^{16}-10u^{14}+\cdots-2u+1\rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 2u^{14} - 2u^{13} + \cdots + 6u - 2 \\ u^{14} - 2u^{13} + \cdots + 2u - 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2u^{14} - u^{13} + \cdots + 5u - 2 \\ u^{14} - u^{13} + \cdots + 3u - 2 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} u^5 - 2u^3 - u \\ u^5 - 3u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -2u^{15} + u^{14} + \cdots + 6u + 1 \\ u^{14} - 8u^{12} + \cdots + 2u + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2u^{15} + 19u^{13} + \cdots + 7u + 1 \\ u^9 - 5u^7 + 7u^5 + u^4 - 2u^3 - 3u^2 + u + 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^{15} - 11u^{13} + \cdots + u - 2 \\ -u^{13} + 8u^{11} + \cdots - 2u - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^{14} + 5u^{13} - 12u^{12} - 39u^{11} + 53u^{10} + 110u^9 - 100u^8 - 138u^7 + 61u^6 + 95u^5 + 16u^4 - 61u^3 - 3u^2 + 8u - 5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{16} - 8u^{15} + \cdots - 4u^2 + 1$
c_2, c_9	$u^{16} + 8u^{14} + \cdots - u + 1$
c_3, c_7	$u^{16} + 8u^{14} + \cdots + u + 1$
c_4, c_8	$u^{16} + u^{15} + \cdots + 2u^3 + 1$
c_5, c_6	$u^{16} - 10u^{14} + \cdots - 2u + 1$
c_{10}, c_{11}	$u^{16} - 10u^{14} + \cdots + 2u + 1$
c_{12}	$u^{16} - 4u^{15} + \cdots + 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{16} - 8y^{15} + \cdots - 8y + 1$
c_2, c_3, c_7 c_9	$y^{16} + 16y^{15} + \cdots + 13y + 1$
c_4, c_8	$y^{16} - 3y^{15} + \cdots - 4y^2 + 1$
c_5, c_6, c_{10} c_{11}	$y^{16} - 20y^{15} + \cdots - 12y + 1$
c_{12}	$y^{16} + 4y^{15} + \cdots + 12y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.749888 + 0.412737I$ $a = -1.154770 - 0.065403I$ $b = -1.25112 - 1.26612I$	$-3.60629 - 4.80216I$	$-11.66439 + 7.25589I$
$u = 0.749888 - 0.412737I$ $a = -1.154770 + 0.065403I$ $b = -1.25112 + 1.26612I$	$-3.60629 + 4.80216I$	$-11.66439 - 7.25589I$
$u = -0.441315 + 0.700895I$ $a = 0.401419 - 0.297642I$ $b = -0.271686 + 0.252626I$	$0.00681 + 2.36445I$	$3.00784 - 9.19006I$
$u = -0.441315 - 0.700895I$ $a = 0.401419 + 0.297642I$ $b = -0.271686 - 0.252626I$	$0.00681 - 2.36445I$	$3.00784 + 9.19006I$
$u = -0.569717 + 0.232049I$ $a = 0.79724 - 1.81995I$ $b = -0.297249 + 0.518346I$	$-6.73121 + 0.81986I$	$-5.13640 - 9.16053I$
$u = -0.569717 - 0.232049I$ $a = 0.79724 + 1.81995I$ $b = -0.297249 - 0.518346I$	$-6.73121 - 0.81986I$	$-5.13640 + 9.16053I$
$u = 1.48473 + 0.16212I$ $a = -0.003550 - 0.154473I$ $b = 0.086407 - 0.568102I$	$-6.11354 - 5.27538I$	$-8.43831 + 4.08338I$
$u = 1.48473 - 0.16212I$ $a = -0.003550 + 0.154473I$ $b = 0.086407 + 0.568102I$	$-6.11354 + 5.27538I$	$-8.43831 - 4.08338I$
$u = -1.52213 + 0.04939I$ $a = 0.65730 - 2.20214I$ $b = 0.29843 - 1.81113I$	$-8.39527 - 1.62333I$	$-8.70827 + 4.27612I$
$u = -1.52213 - 0.04939I$ $a = 0.65730 + 2.20214I$ $b = 0.29843 + 1.81113I$	$-8.39527 + 1.62333I$	$-8.70827 - 4.27612I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.58491 + 0.07036I$ $a = -0.081804 - 0.324870I$ $b = -0.239422 - 1.353340I$	$-14.2049 - 1.9436I$	$-8.70390 + 3.79307I$
$u = 1.58491 - 0.07036I$ $a = -0.081804 + 0.324870I$ $b = -0.239422 + 1.353340I$	$-14.2049 + 1.9436I$	$-8.70390 - 3.79307I$
$u = 0.324777 + 0.221310I$ $a = 1.77379 + 2.38441I$ $b = -0.19415 + 1.55667I$	$-1.96389 + 2.48939I$	$-2.99843 - 1.76642I$
$u = 0.324777 - 0.221310I$ $a = 1.77379 - 2.38441I$ $b = -0.19415 - 1.55667I$	$-1.96389 - 2.48939I$	$-2.99843 + 1.76642I$
$u = -1.61115 + 0.13456I$ $a = -2.38962 + 0.59684I$ $b = -2.13121 + 1.29146I$	$-11.62970 + 6.95567I$	$-11.35815 - 4.21846I$
$u = -1.61115 - 0.13456I$ $a = -2.38962 - 0.59684I$ $b = -2.13121 - 1.29146I$	$-11.62970 - 6.95567I$	$-11.35815 + 4.21846I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^3+u^2-1)^{22})(u^{16}-8u^{15}+\cdots-4u^2+1)$ $\cdot(u^{30}-27u^{29}+\cdots-36864u+2048)$
c_2, c_9	$(u^{16}+8u^{14}+\cdots-u+1)(u^{30}+11u^{28}+\cdots+u-1)$ $\cdot(u^{66}+u^{65}+\cdots-2096u+1357)$
c_3, c_7	$(u^{16}+8u^{14}+\cdots+u+1)(u^{30}+11u^{28}+\cdots+u-1)$ $\cdot(u^{66}+u^{65}+\cdots-2096u+1357)$
c_4, c_8	$(u^{16}+u^{15}+\cdots+2u^3+1)(u^{30}+u^{29}+\cdots-2u-1)$ $\cdot(u^{66}+3u^{65}+\cdots-56u+7)$
c_5, c_6	$(u^{11}-u^{10}-6u^9+5u^8+12u^7-6u^6-10u^5-u^4+5u^3+u^2-1)^6$ $\cdot(u^{16}-10u^{14}+\cdots-2u+1)(u^{30}+7u^{29}+\cdots+4u-8)$
c_{10}, c_{11}	$(u^{11}-u^{10}-6u^9+5u^8+12u^7-6u^6-10u^5-u^4+5u^3+u^2-1)^6$ $\cdot(u^{16}-10u^{14}+\cdots+2u+1)(u^{30}+7u^{29}+\cdots+4u-8)$
c_{12}	$(u^{11}-3u^{10}+4u^9-u^8+2u^7-8u^6+8u^5+5u^4-3u^3-u^2+4u-1)^6$ $\cdot(u^{16}-4u^{15}+\cdots+2u+1)(u^{30}-7u^{29}+\cdots+56384u-20992)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^3-y^2+2y-1)^{22})(y^{16}-8y^{15}+\cdots-8y+1)$ $\cdot\,(y^{30}-9y^{29}+\cdots-48234496y+4194304)$
c_2, c_3, c_7 c_9	$(y^{16}+16y^{15}+\cdots+13y+1)(y^{30}+22y^{29}+\cdots-11y+1)$ $\cdot\,(y^{66}+51y^{65}+\cdots+63245092y+1841449)$
c_4, c_8	$(y^{16}-3y^{15}+\cdots-4y^2+1)(y^{30}+3y^{29}+\cdots+12y+1)$ $\cdot\,(y^{66}-17y^{65}+\cdots-4396y+49)$
c_5, c_6, c_{10} c_{11}	$((y^{11}-13y^{10}+\cdots+2y-1)^6)(y^{16}-20y^{15}+\cdots-12y+1)$ $\cdot\,(y^{30}-33y^{29}+\cdots-16y+64)$
c_{12}	$((y^{11}-y^{10}+\cdots+14y-1)^6)(y^{16}+4y^{15}+\cdots+12y+1)$ $\cdot\,(y^{30}+3y^{29}+\cdots-206688256y+440664064)$