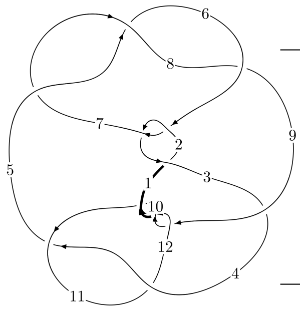
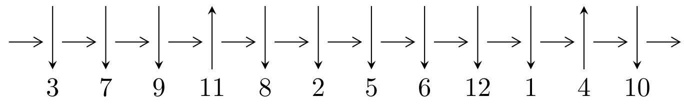
$12a_{0590}$ ($K12a_{0590}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I^u_1 = \langle 1.68464\times 10^{28}u^{87} + 9.72953\times 10^{28}u^{86} + \cdots + 7.00197\times 10^{26}b + 1.37834\times 10^{28},$$
$$-1.24196\times 10^{28}u^{87} - 9.51690\times 10^{28}u^{86} + \cdots + 1.40039\times 10^{27}a - 3.17252\times 10^{28},\ u^{88} + 7u^{87} + \cdots - 5u -$$
$$I^u_2 = \langle b,\ u^7 + 2u^6 - 2u^5 - 4u^4 + 2u^3 + u^2 + a - u + 3,\ u^8 + u^7 - 3u^6 - 2u^5 + 3u^4 + 2u - 1\rangle$$
$$I^u_3 = \langle a^4 - a^3 + a^2 + b - 2a + 1,\ a^5 - a^4 + a^3 - 2a^2 + a - 1,\ u - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 101 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.

$$I_1^u = \langle 1.68\times10^{28}u^{87}+9.73\times10^{28}u^{86}+\cdots+7.00\times10^{26}b+1.38\times10^{28},\ -1.24\times10^{28}u^{87}-9.52\times10^{28}u^{86}+\cdots+1.40\times10^{27}a-3.17\times10^{28},\ u^{88}+7u^{87}+\cdots-5u+1\rangle$$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix}0\\u\end{pmatrix}$$

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

$$a_9 = \begin{pmatrix}-u\\-u^3+u\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}8.86862u^{87}+67.9587u^{86}+\cdots-105.878u+22.6545\\-24.0595u^{87}-138.954u^{86}+\cdots+110.889u-19.6850\end{pmatrix}$$

$$a_4 = \begin{pmatrix}25.3526u^{87}+133.819u^{86}+\cdots-76.7949u+11.9623\\89.2486u^{87}+498.120u^{86}+\cdots-348.549u+61.5438\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-17.3831u^{87}-77.2993u^{86}+\cdots-14.1162u+6.54485\\-73.5892u^{87}-406.913u^{86}+\cdots+271.995u-48.9600\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}24.9048u^{87}+121.952u^{86}+\cdots-30.6185u-0.170725\\107.854u^{87}+601.429u^{86}+\cdots-418.226u+74.6075\end{pmatrix}$$

$$a_3 = \begin{pmatrix}110.590u^{87}+613.566u^{86}+\cdots-427.222u+73.2837\\162.309u^{87}+914.917u^{86}+\cdots-667.930u+117.137\end{pmatrix}$$

$$a_7 = \begin{pmatrix}u\\u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}177.819u^{87}+1015.19u^{86}+\cdots-782.351u+133.966\\229.538u^{87}+1316.54u^{86}+\cdots-1023.06u+177.819\end{pmatrix}$$

$$a_1 = \begin{pmatrix}17.8946u^{87}+106.795u^{86}+\cdots-102.627u+15.4769\\61.3214u^{87}+344.013u^{86}+\cdots-248.957u+43.8200\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$$= -\frac{39945101429885889012290606665}{70019746858669619174909 7992}u^{87} - \frac{42648575021416709506457400371}{70019746858669619174909 7992}u^{86} + \cdots + \frac{10712380134511376634817117 7997}{70019746858669619174909 7992}u - \frac{42161096972870616946069 89229}{17504936714667404793727 4498}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{88} + 36u^{87} + \cdots + 16896u + 1024$
c_2, c_6	$u^{88} - 2u^{87} + \cdots + 64u - 32$
c_3	$u^{88} - 3u^{87} + \cdots + 49703u - 30649$
c_4, c_{11}	$u^{88} - 2u^{87} + \cdots - 1664u - 256$
c_5, c_7, c_8	$u^{88} - 7u^{87} + \cdots + 5u + 1$
c_9, c_{10}, c_{12}	$u^{88} - 10u^{87} + \cdots - 13u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{88} + 24y^{87} + \cdots - 10092544y + 1048576$
c_2, c_6	$y^{88} - 36y^{87} + \cdots - 16896y + 1024$
c_3	$y^{88} - 37y^{87} + \cdots - 880685877y + 939361201$
c_4, c_{11}	$y^{88} + 54y^{87} + \cdots - 49152y + 65536$
c_5, c_7, c_8	$y^{88} - 77y^{87} + \cdots - 7y + 1$
c_9, c_{10}, c_{12}	$y^{88} - 86y^{87} + \cdots - 85y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.888121 + 0.465628I$ $a = -0.674944 - 0.581430I$ $b = 1.115510 - 0.134578I$	$-5.34037 + 0.66509I$	0
$u = 0.888121 - 0.465628I$ $a = -0.674944 + 0.581430I$ $b = 1.115510 + 0.134578I$	$-5.34037 - 0.66509I$	0
$u = 0.766339 + 0.598583I$ $a = -1.036980 - 0.856681I$ $b = 0.42193 - 1.40540I$	$-10.41430 - 4.71583I$	0
$u = 0.766339 - 0.598583I$ $a = -1.036980 + 0.856681I$ $b = 0.42193 + 1.40540I$	$-10.41430 + 4.71583I$	0
$u = 0.952850 + 0.465179I$ $a = -0.065021 - 0.913422I$ $b = -0.351118 - 1.102560I$	$-2.96134 + 2.94865I$	0
$u = 0.952850 - 0.465179I$ $a = -0.065021 + 0.913422I$ $b = -0.351118 + 1.102560I$	$-2.96134 - 2.94865I$	0
$u = 0.800920 + 0.458340I$ $a = 0.73265 + 1.28159I$ $b = -0.112227 + 1.047930I$	$-3.55064 - 1.70767I$	0
$u = 0.800920 - 0.458340I$ $a = 0.73265 - 1.28159I$ $b = -0.112227 - 1.047930I$	$-3.55064 + 1.70767I$	0
$u = 0.238802 + 0.874394I$ $a = -1.51165 - 0.29886I$ $b = 0.64367 - 1.34705I$	$-6.87264 - 11.71080I$	0
$u = 0.238802 - 0.874394I$ $a = -1.51165 + 0.29886I$ $b = 0.64367 + 1.34705I$	$-6.87264 + 11.71080I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.106230 + 0.101887I$ $a = -0.38448 + 2.75149I$ $b = 0.253569 + 0.477806I$	$-3.31594 - 0.58556I$	0
$u = 1.106230 - 0.101887I$ $a = -0.38448 - 2.75149I$ $b = 0.253569 - 0.477806I$	$-3.31594 + 0.58556I$	0
$u = 1.074860 + 0.294544I$ $a = 0.609880 + 0.504609I$ $b = -0.493783 + 0.368228I$	$-0.723913 - 0.558805I$	0
$u = 1.074860 - 0.294544I$ $a = 0.609880 - 0.504609I$ $b = -0.493783 - 0.368228I$	$-0.723913 + 0.558805I$	0
$u = 0.998684 + 0.532410I$ $a = 0.123794 + 0.448994I$ $b = 0.58280 + 1.35034I$	$-9.19064 + 6.74935I$	0
$u = 0.998684 - 0.532410I$ $a = 0.123794 - 0.448994I$ $b = 0.58280 - 1.35034I$	$-9.19064 - 6.74935I$	0
$u = 0.394607 + 0.770272I$ $a = 0.455783 + 0.010772I$ $b = 0.31689 + 1.42777I$	$-9.29942 - 0.08924I$	0
$u = 0.394607 - 0.770272I$ $a = 0.455783 - 0.010772I$ $b = 0.31689 - 1.42777I$	$-9.29942 + 0.08924I$	0
$u = 0.236702 + 0.827946I$ $a = 1.33516 + 0.60966I$ $b = -0.428462 + 1.161060I$	$-0.75062 - 7.56823I$	0
$u = 0.236702 - 0.827946I$ $a = 1.33516 - 0.60966I$ $b = -0.428462 - 1.161060I$	$-0.75062 + 7.56823I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.257930 + 0.804225I$ $a = -0.992899 - 0.708956I$ $b = 1.176510 + 0.257378I$	$-3.37075 - 5.18603I$	0
$u = 0.257930 - 0.804225I$ $a = -0.992899 + 0.708956I$ $b = 1.176510 - 0.257378I$	$-3.37075 + 5.18603I$	0
$u = 0.044598 + 0.812501I$ $a = 0.012409 - 0.949891I$ $b = -0.068037 + 0.976812I$	$-0.94317 - 2.91824I$	$-8.00000 + 0.I$
$u = 0.044598 - 0.812501I$ $a = 0.012409 + 0.949891I$ $b = -0.068037 - 0.976812I$	$-0.94317 + 2.91824I$	$-8.00000 + 0.I$
$u = 0.265848 + 0.760527I$ $a = -0.709338 - 0.763779I$ $b = 0.074648 - 1.085590I$	$-1.85509 - 2.57254I$	0
$u = 0.265848 - 0.760527I$ $a = -0.709338 + 0.763779I$ $b = 0.074648 + 1.085590I$	$-1.85509 + 2.57254I$	0
$u = 0.164802 + 0.765395I$ $a = 0.640282 + 0.424932I$ $b = -0.640037 - 0.265485I$	$1.98407 - 3.37950I$	$-3.18324 + 4.49505I$
$u = 0.164802 - 0.765395I$ $a = 0.640282 - 0.424932I$ $b = -0.640037 + 0.265485I$	$1.98407 + 3.37950I$	$-3.18324 - 4.49505I$
$u = -1.210690 + 0.142812I$ $a = 0.167563 + 0.494552I$ $b = -0.564547 + 1.141500I$	$-8.03151 - 3.54347I$	0
$u = -1.210690 - 0.142812I$ $a = 0.167563 - 0.494552I$ $b = -0.564547 - 1.141500I$	$-8.03151 + 3.54347I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.239120 + 0.245897I$ $a = 0.512434 - 0.571361I$ $b = 0.566252 + 0.257444I$	$-1.10788 - 1.71772I$	0
$u = 1.239120 - 0.245897I$ $a = 0.512434 + 0.571361I$ $b = 0.566252 - 0.257444I$	$-1.10788 + 1.71772I$	0
$u = 1.215600 + 0.383630I$ $a = -0.934428 - 0.097206I$ $b = 0.033207 - 1.038470I$	$-4.54745 - 1.38520I$	0
$u = 1.215600 - 0.383630I$ $a = -0.934428 + 0.097206I$ $b = 0.033207 + 1.038470I$	$-4.54745 + 1.38520I$	0
$u = -1.276630 + 0.183299I$ $a = -0.215638 - 0.758974I$ $b = 0.582952 - 0.942243I$	$-2.95506 + 0.13185I$	0
$u = -1.276630 - 0.183299I$ $a = -0.215638 + 0.758974I$ $b = 0.582952 + 0.942243I$	$-2.95506 - 0.13185I$	0
$u = 0.051522 + 0.675391I$ $a = -0.742113 + 0.645879I$ $b = 0.611315 - 0.427751I$	$2.51572 - 1.61584I$	$-1.91976 + 3.16837I$
$u = 0.051522 - 0.675391I$ $a = -0.742113 - 0.645879I$ $b = 0.611315 + 0.427751I$	$2.51572 + 1.61584I$	$-1.91976 - 3.16837I$
$u = 1.314380 + 0.174281I$ $a = 1.09840 + 2.65275I$ $b = 0.010805 + 1.079500I$	$-4.65633 - 0.63571I$	0
$u = 1.314380 - 0.174281I$ $a = 1.09840 - 2.65275I$ $b = 0.010805 - 1.079500I$	$-4.65633 + 0.63571I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.320720+0.187553I$ $a=\ \ 0.655900-0.911111I$ $b=-0.908877-0.545626I$	$-6.01527+1.89183I$	0
$u=-1.320720-0.187553I$ $a=\ \ 0.655900+0.911111I$ $b=-0.908877+0.545626I$	$-6.01527-1.89183I$	0
$u=-1.307460+0.264842I$ $a=-0.436161+0.563621I$ $b=\ \ 0.704898+0.536481I$	$-1.74045+5.01419I$	0
$u=-1.307460-0.264842I$ $a=-0.436161-0.563621I$ $b=\ \ 0.704898-0.536481I$	$-1.74045-5.01419I$	0
$u=-1.292640+0.344864I$ $a=\ \ 0.615494-0.130607I$ $b=-0.165716-0.926745I$	$-5.11018+7.07530I$	0
$u=-1.292640-0.344864I$ $a=\ \ 0.615494+0.130607I$ $b=-0.165716+0.926745I$	$-5.11018-7.07530I$	0
$u=-0.174131+0.636836I$ $a=\ \ 2.02360-0.48082I$ $b=-0.580461-1.285720I$	$-5.14037+6.25877I$	$-9.44624-3.66252I$
$u=-0.174131-0.636836I$ $a=\ \ 2.02360+0.48082I$ $b=-0.580461+1.285720I$	$-5.14037-6.25877I$	$-9.44624+3.66252I$
$u=\ \ 1.330870+0.207803I$ $a=-0.933904+0.972883I$ $b=-1.166170-0.198096I$	$-6.30741-3.16964I$	0
$u=\ \ 1.330870-0.207803I$ $a=-0.933904-0.972883I$ $b=-1.166170+0.198096I$	$-6.30741+3.16964I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.332230 + 0.235913I$ $a = -1.36376 - 2.55428I$ $b = 0.386394 - 1.149300I$	$-3.80107 - 5.54437I$	0
$u = 1.332230 - 0.235913I$ $a = -1.36376 + 2.55428I$ $b = 0.386394 + 1.149300I$	$-3.80107 + 5.54437I$	0
$u = -1.339550 + 0.224805I$ $a = 0.091229 + 1.306420I$ $b = -0.487922 + 0.888767I$	$-5.42509 + 4.45293I$	0
$u = -1.339550 - 0.224805I$ $a = 0.091229 - 1.306420I$ $b = -0.487922 - 0.888767I$	$-5.42509 - 4.45293I$	0
$u = 1.380100 + 0.123580I$ $a = -1.09435 - 2.36932I$ $b = -0.37266 - 1.42969I$	$-11.86110 + 2.15849I$	0
$u = 1.380100 - 0.123580I$ $a = -1.09435 + 2.36932I$ $b = -0.37266 + 1.42969I$	$-11.86110 - 2.15849I$	0
$u = 1.365220 + 0.261535I$ $a = 1.33626 + 2.41346I$ $b = -0.61664 + 1.35909I$	$-10.02730 - 9.55714I$	0
$u = 1.365220 - 0.261535I$ $a = 1.33626 - 2.41346I$ $b = -0.61664 - 1.35909I$	$-10.02730 + 9.55714I$	0
$u = -1.363890 + 0.319129I$ $a = -0.234330 - 0.481461I$ $b = -0.705464 + 0.206220I$	$-2.84821 + 7.30244I$	0
$u = -1.363890 - 0.319129I$ $a = -0.234330 + 0.481461I$ $b = -0.705464 - 0.206220I$	$-2.84821 - 7.30244I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.40144$ $a=-0.385644$ $b=-0.577672$	-7.10454	0
$u=-0.087677+0.585925I$ $a=-1.96671+0.65542I$ $b=\ \ 0.433173+1.031780I$	$0.69910+2.52777I$	$-5.84354-3.35799I$
$u=-0.087677-0.585925I$ $a=-1.96671-0.65542I$ $b=\ \ 0.433173-1.031780I$	$0.69910-2.52777I$	$-5.84354+3.35799I$
$u=\ \ 0.563116$ $a=\ \ 0.509143$ $b=-0.313068$	-0.958674	-9.85690
$u=-1.40715+0.30877I$ $a=-0.99962+1.99298I$ $b=\ \ 0.120608+1.188840I$	$-7.16857+6.45126I$	0
$u=-1.40715-0.30877I$ $a=-0.99962-1.99298I$ $b=\ \ 0.120608-1.188840I$	$-7.16857-6.45126I$	0
$u=\ \ 0.124503+0.544345I$ $a=\ \ 1.27598-0.81112I$ $b=-0.260698-0.771913I$	$-0.80366-1.58561I$	$-10.67225+2.90476I$
$u=\ \ 0.124503-0.544345I$ $a=\ \ 1.27598+0.81112I$ $b=-0.260698+0.771913I$	$-0.80366+1.58561I$	$-10.67225-2.90476I$
$u=-1.40680+0.34051I$ $a=\ \ 1.26967-1.96871I$ $b=-0.455387-1.216770I$	$-5.97118+11.78330I$	0
$u=-1.40680-0.34051I$ $a=\ \ 1.26967+1.96871I$ $b=-0.455387+1.216770I$	$-5.97118-11.78330I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.41173 + 0.32636I$ $a = 0.451797 + 0.801134I$ $b = 1.251800 - 0.295347I$	$-8.68021 + 9.27069I$	0
$u = -1.41173 - 0.32636I$ $a = 0.451797 - 0.801134I$ $b = 1.251800 + 0.295347I$	$-8.68021 - 9.27069I$	0
$u = -1.41652 + 0.36230I$ $a = -1.32614 + 1.85531I$ $b = 0.68460 + 1.36460I$	$-12.1310 + 16.1617I$	0
$u = -1.41652 - 0.36230I$ $a = -1.32614 - 1.85531I$ $b = 0.68460 - 1.36460I$	$-12.1310 - 16.1617I$	0
$u = -1.45238 + 0.27357I$ $a = 0.98226 - 1.57277I$ $b = 0.26475 - 1.52039I$	$-15.2401 + 3.8156I$	0
$u = -1.45238 - 0.27357I$ $a = 0.98226 + 1.57277I$ $b = 0.26475 + 1.52039I$	$-15.2401 - 3.8156I$	0
$u = -1.47888 + 0.02352I$ $a = 0.11238 - 2.43472I$ $b = -0.196285 - 1.246890I$	$-11.09960 + 2.70583I$	0
$u = -1.47888 - 0.02352I$ $a = 0.11238 + 2.43472I$ $b = -0.196285 + 1.246890I$	$-11.09960 - 2.70583I$	0
$u = -1.48451$ $a = 0.899695$ $b = 1.29707$	-13.2474	0
$u = -0.051131 + 0.501827I$ $a = 1.30705 - 1.31645I$ $b = -0.963746 + 0.258016I$	$-1.87492 + 0.52113I$	$-7.46007 + 0.33584I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.051131 - 0.501827I$ $a = 1.30705 + 1.31645I$ $b = -0.963746 - 0.258016I$	$-1.87492 - 0.52113I$	$-7.46007 - 0.33584I$
$u = -1.51084 + 0.06009I$ $a = -0.09053 + 2.25061I$ $b = 0.52441 + 1.48832I$	$-18.1852 + 6.5334I$	0
$u = -1.51084 - 0.06009I$ $a = -0.09053 - 2.25061I$ $b = 0.52441 - 1.48832I$	$-18.1852 - 6.5334I$	0
$u = -0.346736 + 0.293540I$ $a = -1.47471 + 0.88660I$ $b = -0.407022 + 1.274040I$	$-6.45539 - 3.75624I$	$-8.92208 + 2.37124I$
$u = -0.346736 - 0.293540I$ $a = -1.47471 - 0.88660I$ $b = -0.407022 - 1.274040I$	$-6.45539 + 3.75624I$	$-8.92208 - 2.37124I$
$u = -0.109910 + 0.191162I$ $a = 2.62502 - 1.00223I$ $b = 0.221171 - 0.788369I$	$-0.464107 - 1.212900I$	$-5.34512 + 5.07325I$
$u = -0.109910 - 0.191162I$ $a = 2.62502 + 1.00223I$ $b = 0.221171 + 0.788369I$	$-0.464107 + 1.212900I$	$-5.34512 - 5.07325I$
$u = 0.164075$ $a = 6.48224$ $b = -0.479550$	-2.12876	-0.110400

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^7-10u^6+7u^5+25u^4-9u^3-12u^2+8u-25$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$
c_2, c_6	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$
c_4, c_{11}	y^8
c_5, c_7, c_8	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$
c_9, c_{10}, c_{12}	$(y-1)^8$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.180120 + 0.268597I$ $a = 0.281371 - 1.128550I$ $b = 0$	$-2.68559 - 1.13123I$	$-9.56807 + 0.79885I$
$u = 1.180120 - 0.268597I$ $a = 0.281371 + 1.128550I$ $b = 0$	$-2.68559 + 1.13123I$	$-9.56807 - 0.79885I$
$u = 0.108090 + 0.747508I$ $a = -0.208670 + 0.825203I$ $b = 0$	$0.51448 - 2.57849I$	$-6.42531 + 3.25625I$
$u = 0.108090 - 0.747508I$ $a = -0.208670 - 0.825203I$ $b = 0$	$0.51448 + 2.57849I$	$-6.42531 - 3.25625I$
$u = -1.37100$ $a = -0.829189$ $b = 0$	-8.14766	-20.0060
$u = -1.334530 + 0.318930I$ $a = -0.284386 - 0.605794I$ $b = 0$	$-4.02461 + 6.44354I$	$-11.71592 - 3.92092I$
$u = -1.334530 - 0.318930I$ $a = -0.284386 + 0.605794I$ $b = 0$	$-4.02461 - 6.44354I$	$-11.71592 + 3.92092I$
$u = 0.463640$ $a = -2.74744$ $b = 0$	-2.48997	-23.5750

III. $\boldsymbol{I_3^u = \langle a^4 - a^3 + a^2 + b - 2a + 1,\ a^5 - a^4 + a^3 - 2a^2 + a - 1,\ u - 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -a^4 + a^3 - a^2 + 2a - 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ a^4 - a - 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} a \\ -a^3 + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a^4 - a - 1 \\ a^3 - a^2 - 2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a^4 - a - 1 \\ a^4 - a - 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} a^4 - a - 1 \\ a^4 - a - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} a^4 - a - 1 \\ a^4 - a - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5a^4 + 5a^3 + 7a - 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6	y^5
c_3	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_4, c_{11}	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_5, c_7, c_8	$(y-1)^5$
c_9, c_{10}, c_{12}	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.428550 + 1.039280I$ $b = 0.339110 + 0.822375I$	$-1.97403 + 1.53058I$	$-10.50099 - 3.45976I$
$u = 1.00000$ $a = -0.428550 - 1.039280I$ $b = 0.339110 - 0.822375I$	$-1.97403 - 1.53058I$	$-10.50099 + 3.45976I$
$u = 1.00000$ $a = 0.276511 + 0.728237I$ $b = -0.455697 + 1.200150I$	$-7.51750 - 4.40083I$	$-14.3774 + 5.8297I$
$u = 1.00000$ $a = 0.276511 - 0.728237I$ $b = -0.455697 - 1.200150I$	$-7.51750 + 4.40083I$	$-14.3774 - 5.8297I$
$u = 1.00000$ $a = 1.30408$ $b = -0.766826$	-4.04602	-8.24330

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^5(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)$ $\cdot(u^{88}+36u^{87}+\cdots+16896u+1024)$
c_2	$u^5(u^8-u^7+\cdots+2u-1)(u^{88}-2u^{87}+\cdots+64u-32)$
c_3	$(u^5+3u^4+4u^3+u^2-u-1)$ $\cdot(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)$ $\cdot(u^{88}-3u^{87}+\cdots+49703u-30649)$
c_4	$u^8(u^5+u^4+\cdots+u+1)(u^{88}-2u^{87}+\cdots-1664u-256)$
c_5	$((u-1)^5)(u^8+u^7+\cdots+2u-1)(u^{88}-7u^{87}+\cdots+5u+1)$
c_6	$u^5(u^8+u^7+\cdots-2u-1)(u^{88}-2u^{87}+\cdots+64u-32)$
c_7, c_8	$((u+1)^5)(u^8-u^7+\cdots-2u-1)(u^{88}-7u^{87}+\cdots+5u+1)$
c_9, c_{10}	$((u-1)^8)(u^5+u^4+\cdots+u-1)(u^{88}-10u^{87}+\cdots-13u+1)$
c_{11}	$u^8(u^5-u^4+\cdots+u-1)(u^{88}-2u^{87}+\cdots-1664u-256)$
c_{12}	$((u+1)^8)(u^5-u^4+\cdots+u+1)(u^{88}-10u^{87}+\cdots-13u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^5(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)$ $\cdot(y^{88}+24y^{87}+\cdots-10092544y+1048576)$
c_2, c_6	$y^5(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)$ $\cdot(y^{88}-36y^{87}+\cdots-16896y+1024)$
c_3	$(y^5-y^4+8y^3-3y^2+3y-1)$ $\cdot(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)$ $\cdot(y^{88}-37y^{87}+\cdots-880685877y+939361201)$
c_4, c_{11}	$y^8(y^5+3y^4+\cdots-y-1)(y^{88}+54y^{87}+\cdots-49152y+65536)$
c_5, c_7, c_8	$(y-1)^5(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot(y^{88}-77y^{87}+\cdots-7y+1)$
c_9, c_{10}, c_{12}	$((y-1)^8)(y^5-5y^4+\cdots-y-1)(y^{88}-86y^{87}+\cdots-85y+1)$