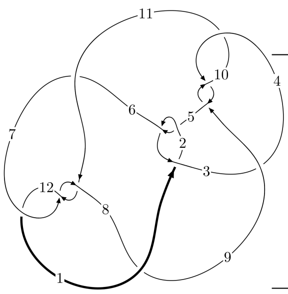
$12a_{0372}$ ($K12a_{0372}$)



A knot diagram[1]

Linearized knot diagam

$$\begin{array}{cccccccccccc} \downarrow & \downarrow & \uparrow & \uparrow & \downarrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ 3 & 6 & 9 & 10 & 2 & 11 & 12 & 1 & 5 & 4 & 8 & 7 \end{array}$$

Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -4.00775 \times 10^{87} u^{85} - 2.48507 \times 10^{88} u^{84} + \cdots + 1.44535 \times 10^{88} b + 2.76929 \times 10^{89}, \\ & -3.45221 \times 10^{89} u^{85} - 1.15168 \times 10^{90} u^{84} + \cdots + 4.91419 \times 10^{89} a + 4.17969 \times 10^{90}, \\ & u^{86} + 4u^{85} + \cdots - 20u - 17 \rangle \\ I_2^u = \langle & -194a^5 - 315a^4 - 5270a^3 - 4555a^2 + 69650b - 64279a - 26651, \\ & a^6 + 2a^5 + 25a^4 + 30a^3 + 206a^2 + 176a + 593,\ u - 1 \rangle \\ I_3^u = \langle & b,\ a^3 + a^2 - 1,\ u + 1 \rangle \end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 95 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. $\boldsymbol{I_1^u = \langle -4.01 \times 10^{87} u^{85} - 2.49 \times 10^{88} u^{84} + \cdots + 1.45 \times 10^{88} b + 2.77 \times 10^{89},\ -3.45 \times 10^{89} u^{85} - 1.15 \times 10^{90} u^{84} + \cdots + 4.91 \times 10^{89} a + 4.18 \times 10^{90},\ u^{86} + 4u^{85} + \cdots - 20u - 17 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.702499u^{85} + 2.34358u^{84} + \cdots - 17.6252u - 8.50536 \\ 0.277286u^{85} + 1.71936u^{84} + \cdots + 8.31636u - 19.1600 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.504301u^{85} + 1.30510u^{84} + \cdots - 13.8214u - 5.82459 \\ 0.0137884u^{85} + 0.0233804u^{84} + \cdots + 1.94469u - 3.22686 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.294534u^{85} + 1.15575u^{84} + \cdots + 5.28585u - 19.1152 \\ 0.244106u^{85} + 0.263311u^{84} + \cdots - 4.48711u + 4.51370 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1.36374u^{85} - 4.50519u^{84} + \cdots + 9.32384u + 28.0444 \\ 0.448009u^{85} + 1.37637u^{84} + \cdots - 4.79587u - 5.94786 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.425213u^{85} + 0.624223u^{84} + \cdots - 25.9416u + 10.6546 \\ 0.277286u^{85} + 1.71936u^{84} + \cdots + 8.31636u - 19.1600 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.00970161u^{85} - 0.280717u^{84} + \cdots - 21.0594u + 11.2096 \\ 0.0519514u^{85} + 0.807957u^{84} + \cdots + 2.49003u - 10.0728 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1.53639u^{85} - 4.66319u^{84} + \cdots + 30.2188u + 12.1772 \\ 0.253558u^{85} + 0.199433u^{84} + \cdots - 14.9224u + 12.1204 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.907710u^{85} - 2.76373u^{84} + \cdots + 58.7556u + 7.47521$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{86} + 42u^{85} + \cdots + 8016u + 289$
c_2, c_5	$u^{86} + 4u^{85} + \cdots - 20u - 17$
c_3	$u^{86} - u^{85} + \cdots - 8992u + 16424$
c_4, c_9, c_{10}	$u^{86} + u^{85} + \cdots + 16u + 8$
c_6, c_8	$u^{86} + 2u^{85} + \cdots - 11367u - 2391$
c_7, c_{11}, c_{12}	$u^{86} - 2u^{85} + \cdots - 3u - 3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{86} + 14y^{85} + \cdots - 19463568y + 83521$
c_2, c_5	$y^{86} - 42y^{85} + \cdots - 8016y + 289$
c_3	$y^{86} - 5y^{85} + \cdots - 1234215040y + 269747776$
c_4, c_9, c_{10}	$y^{86} + 79y^{85} + \cdots - 1280y + 64$
c_6, c_8	$y^{86} - 56y^{85} + \cdots + 68087067y + 5716881$
c_7, c_{11}, c_{12}	$y^{86} + 72y^{85} + \cdots + 51y + 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.509248 + 0.852642I$ $a = 0.322825 + 0.048607I$ $b = -0.789445 - 0.160402I$	$6.59236 + 1.97479I$	0
$u = 0.509248 - 0.852642I$ $a = 0.322825 - 0.048607I$ $b = -0.789445 + 0.160402I$	$6.59236 - 1.97479I$	0
$u = 0.584122 + 0.824498I$ $a = -0.334198 - 0.153374I$ $b = 0.790561 + 0.106022I$	$3.13486 - 2.30297I$	0
$u = 0.584122 - 0.824498I$ $a = -0.334198 + 0.153374I$ $b = 0.790561 - 0.106022I$	$3.13486 + 2.30297I$	0
$u = -0.329631 + 0.932362I$ $a = -0.451079 - 0.979419I$ $b = 0.32373 - 1.38168I$	$-2.75721 - 10.22800I$	0
$u = -0.329631 - 0.932362I$ $a = -0.451079 + 0.979419I$ $b = 0.32373 + 1.38168I$	$-2.75721 + 10.22800I$	0
$u = 0.896991 + 0.410818I$ $a = 0.53853 + 2.78692I$ $b = 0.06533 + 1.51526I$	$-4.54753 - 1.67750I$	0
$u = 0.896991 - 0.410818I$ $a = 0.53853 - 2.78692I$ $b = 0.06533 - 1.51526I$	$-4.54753 + 1.67750I$	0
$u = -0.371807 + 0.912630I$ $a = 0.399618 + 0.904183I$ $b = -0.326539 + 1.355580I$	$1.81661 - 5.99490I$	0
$u = -0.371807 - 0.912630I$ $a = 0.399618 - 0.904183I$ $b = -0.326539 - 1.355580I$	$1.81661 + 5.99490I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.447851 + 0.874871I$ $a = -0.312467 + 0.033097I$ $b = 0.787438 + 0.204817I$	$2.26451 + 6.21660I$	0
$u = 0.447851 - 0.874871I$ $a = -0.312467 - 0.033097I$ $b = 0.787438 - 0.204817I$	$2.26451 - 6.21660I$	0
$u = -0.608566 + 0.769255I$ $a = -0.650245 + 0.848054I$ $b = 0.384469 + 0.945216I$	$-0.04968 - 1.95533I$	0
$u = -0.608566 - 0.769255I$ $a = -0.650245 - 0.848054I$ $b = 0.384469 - 0.945216I$	$-0.04968 + 1.95533I$	0
$u = -0.428356 + 0.876203I$ $a = -0.326362 - 0.791803I$ $b = 0.324167 - 1.315440I$	$-1.30715 - 1.70626I$	0
$u = -0.428356 - 0.876203I$ $a = -0.326362 + 0.791803I$ $b = 0.324167 + 1.315440I$	$-1.30715 + 1.70626I$	0
$u = -0.686031 + 0.768487I$ $a = 0.752897 - 0.902852I$ $b = -0.373726 - 1.024720I$	$3.93150 + 2.25304I$	0
$u = -0.686031 - 0.768487I$ $a = 0.752897 + 0.902852I$ $b = -0.373726 + 1.024720I$	$3.93150 - 2.25304I$	0
$u = 0.924737 + 0.534530I$ $a = 0.575892 + 0.848478I$ $b = -0.665118 + 0.182466I$	$0.27137 - 3.73444I$	0
$u = 0.924737 - 0.534530I$ $a = 0.575892 - 0.848478I$ $b = -0.665118 - 0.182466I$	$0.27137 + 3.73444I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.966175 + 0.460720I$ $a = -0.52607 - 2.70537I$ $b = -0.09038 - 1.52749I$	$-8.90441 - 5.42664I$	0
$u = 0.966175 - 0.460720I$ $a = -0.52607 + 2.70537I$ $b = -0.09038 + 1.52749I$	$-8.90441 + 5.42664I$	0
$u = -0.756050 + 0.766739I$ $a = -0.861234 + 0.982031I$ $b = 0.371400 + 1.094440I$	$0.10136 + 6.51112I$	0
$u = -0.756050 - 0.766739I$ $a = -0.861234 - 0.982031I$ $b = 0.371400 - 1.094440I$	$0.10136 - 6.51112I$	0
$u = -0.986156 + 0.463423I$ $a = 2.45774 - 1.20507I$ $b = -0.189677 - 1.345070I$	$-8.83115 + 0.16688I$	0
$u = -0.986156 - 0.463423I$ $a = 2.45774 + 1.20507I$ $b = -0.189677 + 1.345070I$	$-8.83115 - 0.16688I$	0
$u = -0.871820 + 0.230790I$ $a = -0.264628 + 0.427871I$ $b = -0.187263 + 0.458115I$	$-1.46632 + 0.85886I$	$0. - 2.31420I$
$u = -0.871820 - 0.230790I$ $a = -0.264628 - 0.427871I$ $b = -0.187263 - 0.458115I$	$-1.46632 - 0.85886I$	$0. + 2.31420I$
$u = -0.879504 + 0.671225I$ $a = -0.360993 + 0.571062I$ $b = -0.418022 + 0.882634I$	$-0.283252 - 1.079100I$	0
$u = -0.879504 - 0.671225I$ $a = -0.360993 - 0.571062I$ $b = -0.418022 - 0.882634I$	$-0.283252 + 1.079100I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.100000 + 0.189928I$ $a = -0.23593 - 2.68382I$ $b = -0.089636 - 1.408420I$	$-7.23808 + 0.30916I$	0
$u = 1.100000 - 0.189928I$ $a = -0.23593 + 2.68382I$ $b = -0.089636 + 1.408420I$	$-7.23808 - 0.30916I$	0
$u = -0.981639 + 0.534063I$ $a = -2.00458 + 1.26234I$ $b = 0.229804 + 1.325390I$	$-3.48232 + 3.39964I$	0
$u = -0.981639 - 0.534063I$ $a = -2.00458 - 1.26234I$ $b = 0.229804 - 1.325390I$	$-3.48232 - 3.39964I$	0
$u = 0.742085 + 0.454046I$ $a = -0.864160 - 0.546861I$ $b = 0.587415 - 0.064260I$	$0.916106 - 0.421753I$	$10.41879 + 0.I$
$u = 0.742085 - 0.454046I$ $a = -0.864160 + 0.546861I$ $b = 0.587415 + 0.064260I$	$0.916106 + 0.421753I$	$10.41879 + 0.I$
$u = 0.830940 + 0.240284I$ $a = 1.41644 + 0.82559I$ $b = -0.448531 + 0.114261I$	$-4.18135 + 2.25158I$	$7.13926 + 2.78271I$
$u = 0.830940 - 0.240284I$ $a = 1.41644 - 0.82559I$ $b = -0.448531 - 0.114261I$	$-4.18135 - 2.25158I$	$7.13926 - 2.78271I$
$u = 1.047320 + 0.468070I$ $a = -0.536699 - 1.151690I$ $b = 0.631147 - 0.292577I$	$-5.75601 - 5.20754I$	0
$u = 1.047320 - 0.468070I$ $a = -0.536699 + 1.151690I$ $b = 0.631147 + 0.292577I$	$-5.75601 + 5.20754I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.095810 + 0.344023I$ $a = 0.450668 - 0.368225I$ $b = 0.464015 - 0.457806I$	$-6.48632 + 1.75628I$	0
$u = -1.095810 - 0.344023I$ $a = 0.450668 + 0.368225I$ $b = 0.464015 + 0.457806I$	$-6.48632 - 1.75628I$	0
$u = -0.958955 + 0.647599I$ $a = 0.414297 - 0.568075I$ $b = 0.474434 - 0.815046I$	$3.10357 + 3.09687I$	0
$u = -0.958955 - 0.647599I$ $a = 0.414297 + 0.568075I$ $b = 0.474434 + 0.815046I$	$3.10357 - 3.09687I$	0
$u = 0.753237 + 0.364190I$ $a = -0.64318 - 2.95965I$ $b = -0.02689 - 1.50940I$	$-8.07669 + 1.87059I$	$2.84516 + 0.42953I$
$u = 0.753237 - 0.364190I$ $a = -0.64318 + 2.95965I$ $b = -0.02689 + 1.50940I$	$-8.07669 - 1.87059I$	$2.84516 - 0.42953I$
$u = -1.016700 + 0.633935I$ $a = -0.451131 + 0.561079I$ $b = -0.518692 + 0.772841I$	$-1.29006 + 7.25611I$	0
$u = -1.016700 - 0.633935I$ $a = -0.451131 - 0.561079I$ $b = -0.518692 - 0.772841I$	$-1.29006 - 7.25611I$	0
$u = -1.054830 + 0.577809I$ $a = 1.81540 - 1.65430I$ $b = -0.271885 - 1.362200I$	$-4.61406 + 7.15880I$	0
$u = -1.054830 - 0.577809I$ $a = 1.81540 + 1.65430I$ $b = -0.271885 + 1.362200I$	$-4.61406 - 7.15880I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.426091+0.660797I$ $a=-0.467482-0.247485I$ $b=\ \ 0.196765-1.275150I$	$-2.83344-2.33982I$	$4.51071+3.69455I$
$u=-0.426091-0.660797I$ $a=-0.467482+0.247485I$ $b=\ \ 0.196765+1.275150I$	$-2.83344+2.33982I$	$4.51071-3.69455I$
$u=\ \ 1.171760+0.330721I$ $a=\ \ 0.36279+2.60051I$ $b=\ \ 0.15928+1.45009I$	$-12.60960+0.53188I$	0
$u=\ \ 1.171760-0.330721I$ $a=\ \ 0.36279-2.60051I$ $b=\ \ 0.15928-1.45009I$	$-12.60960-0.53188I$	0
$u=-0.561224+0.536687I$ $a=-0.130904-0.198541I$ $b=-0.091191+1.196000I$	$-2.28991+0.95503I$	$5.78427-4.47037I$
$u=-0.561224-0.536687I$ $a=-0.130904+0.198541I$ $b=-0.091191-1.196000I$	$-2.28991-0.95503I$	$5.78427+4.47037I$
$u=-1.23000$ $a=\ \ 0.487096$ $b=\ \ 0.526354$	0.302978	0
$u=\ \ 1.033160+0.672308I$ $a=\ \ 0.249124+0.871946I$ $b=-0.792360+0.236164I$	$1.77987-3.27789I$	0
$u=\ \ 1.033160-0.672308I$ $a=\ \ 0.249124-0.871946I$ $b=-0.792360-0.236164I$	$1.77987+3.27789I$	0
$u=-1.120250+0.532355I$ $a=-1.98299+2.00595I$ $b=\ \ 0.25455+1.40909I$	$-11.17690+8.47102I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.120250-0.532355I$ $a=-1.98299-2.00595I$ $b=\ \ 0.25455-1.40909I$	$-11.17690-8.47102I$	0
$u=-1.253150+0.085853I$ $a=-0.518095+0.091265I$ $b=-0.562417+0.108346I$	$-3.71512-3.61639I$	0
$u=-1.253150-0.085853I$ $a=-0.518095-0.091265I$ $b=-0.562417-0.108346I$	$-3.71512+3.61639I$	0
$u=\ \ 1.087850+0.663273I$ $a=-0.201529-0.952587I$ $b=\ \ 0.799806-0.280258I$	$4.84791-7.60111I$	0
$u=\ \ 1.087850-0.663273I$ $a=-0.201529+0.952587I$ $b=\ \ 0.799806+0.280258I$	$4.84791+7.60111I$	0
$u=-0.226176+0.670392I$ $a=\ \ 1.092930+0.581518I$ $b=-0.183977+1.375540I$	$-8.69537-3.85336I$	$0.06507+3.00079I$
$u=-0.226176-0.670392I$ $a=\ \ 1.092930-0.581518I$ $b=-0.183977-1.375540I$	$-8.69537+3.85336I$	$0.06507-3.00079I$
$u=\ \ 1.122620+0.650698I$ $a=\ \ 0.176872+1.009790I$ $b=-0.799739+0.310768I$	$0.23048-11.85200I$	0
$u=\ \ 1.122620-0.650698I$ $a=\ \ 0.176872-1.009790I$ $b=-0.799739-0.310768I$	$0.23048+11.85200I$	0
$u=-1.126730+0.643608I$ $a=\ \ 1.51181-1.91377I$ $b=-0.32382-1.39843I$	$-3.40709+7.31230I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.126730-0.643608I$ $a=\ \ 1.51181+1.91377I$ $b=-0.32382+1.39843I$	$-3.40709-7.31230I$	0
$u=\ \ 1.292600+0.117096I$ $a=-0.17327-2.45986I$ $b=-0.156978-1.269640I$	$-7.24729-1.14255I$	0
$u=\ \ 1.292600-0.117096I$ $a=-0.17327+2.45986I$ $b=-0.156978+1.269640I$	$-7.24729+1.14255I$	0
$u=-0.590405+0.374886I$ $a=\ \ 0.544712+1.162400I$ $b=\ \ 0.011567-1.267360I$	$-7.59821+3.51299I$	$1.50213-4.82756I$
$u=-0.590405-0.374886I$ $a=\ \ 0.544712-1.162400I$ $b=\ \ 0.011567+1.267360I$	$-7.59821-3.51299I$	$1.50213+4.82756I$
$u=\ \ 1.305650+0.179739I$ $a=\ \ 0.24358+2.46781I$ $b=\ \ 0.200042+1.317550I$	$-3.91048+2.62248I$	0
$u=\ \ 1.305650-0.179739I$ $a=\ \ 0.24358-2.46781I$ $b=\ \ 0.200042-1.317550I$	$-3.91048-2.62248I$	0
$u=-1.165480+0.637891I$ $a=-1.49482+2.05321I$ $b=\ \ 0.32450+1.42352I$	$-0.57989+11.67450I$	0
$u=-1.165480-0.637891I$ $a=-1.49482-2.05321I$ $b=\ \ 0.32450-1.42352I$	$-0.57989-11.67450I$	0
$u=\ \ 1.322240+0.219958I$ $a=-0.28506-2.46512I$ $b=-0.226534-1.344900I$	$-8.34294+6.52071I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.322240 - 0.219958I$ $a = -0.28506 + 2.46512I$ $b = -0.226534 + 1.344900I$	$-8.34294 - 6.52071I$	0
$u = -1.188080 + 0.627308I$ $a = 1.50177 - 2.14199I$ $b = -0.32023 - 1.43864I$	$-5.3572 + 15.9154I$	0
$u = -1.188080 - 0.627308I$ $a = 1.50177 + 2.14199I$ $b = -0.32023 + 1.43864I$	$-5.3572 - 15.9154I$	0
$u = 0.032159 + 0.548639I$ $a = 0.683294 - 0.535532I$ $b = -0.458589 - 0.358951I$	$-3.33000 + 1.53573I$	$4.91213 - 4.32886I$
$u = 0.032159 - 0.548639I$ $a = 0.683294 + 0.535532I$ $b = -0.458589 + 0.358951I$	$-3.33000 - 1.53573I$	$4.91213 + 4.32886I$
$u = 0.255360$ $a = -1.59057$ $b = 0.336114$	0.640620	15.8240

II.

$$I^u_2 = \langle -194a^5+69650b+\cdots-64279a-26651,\ a^6+2a^5+\cdots+176a+593,\ u-1\rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} a \\ 0.00278536a^5 + 0.00452261a^4 + \cdots + 0.922886a + 0.382642 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.00104810a^5 + 0.00603015a^4 + \cdots - 0.107581a - 0.651716 \\ -2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.00278536a^5 + 0.00452261a^4 + \cdots - 0.0771141a + 0.382642 \\ -0.00278536a^5 - 0.00452261a^4 + \cdots - 0.922886a - 0.382642 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.00314429a^5 - 0.0180905a^4 + \cdots + 0.322742a + 1.95515 \\ -0.00104810a^5 + 0.00603015a^4 + \cdots - 0.107581a + 3.34828 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.00278536a^5 - 0.00452261a^4 + \cdots + 0.0771141a - 0.382642 \\ 0.00278536a^5 + 0.00452261a^4 + \cdots + 0.922886a + 0.382642 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.00835607a^5 - 0.0135678a^4 + \cdots - 0.768658a - 1.14793 \\ -0.00278536a^5 - 0.00452261a^4 + \cdots + 0.0771141a - 0.382642 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.0197559a^5 + 0.0246231a^4 + \cdots - 1.78810a + 2.72930 \\ -0.0211342a^5 - 0.00854271a^4 + \cdots - 2.20355a - 0.429117 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{776}{34825}a^5 - \frac{36}{995}a^4 - \frac{4216}{6965}a^3 - \frac{3644}{6965}a^2 - \frac{117816}{34825}a - \frac{106604}{34825}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = -0.87744 + 2.08357I$ $b = 1.414210I$	$-9.60386 + 2.82812I$	$-3.50976 - 2.97945I$
$u = 1.00000$ $a = -0.87744 - 2.08357I$ $b = -1.414210I$	$-9.60386 - 2.82812I$	$-3.50976 + 2.97945I$
$u = 1.00000$ $a = 0.75488 + 2.82843I$ $b = 1.414210I$	-5.46628	$3.01951 + 0.I$
$u = 1.00000$ $a = 0.75488 - 2.82843I$ $b = -1.414210I$	-5.46628	$3.01951 + 0.I$
$u = 1.00000$ $a = -0.87744 + 3.57329I$ $b = 1.414210I$	$-9.60386 - 2.82812I$	$-3.50976 + 2.97945I$
$u = 1.00000$ $a = -0.87744 - 3.57329I$ $b = -1.414210I$	$-9.60386 + 2.82812I$	$-3.50976 - 2.97945I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2a^2 + 2a + 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00000$ $a=-0.877439+0.744862I$ $b=\quad 0$	$-4.66906-2.82812I$	$-0.18504+4.10401I$
$u=-1.00000$ $a=-0.877439-0.744862I$ $b=\quad 0$	$-4.66906+2.82812I$	$-0.18504-4.10401I$
$u=-1.00000$ $a=\quad 0.754878$ $b=\quad 0$	-0.531480	2.37010

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^{86}+42u^{85}+\cdots+8016u+289)$
c_2	$((u-1)^3)(u+1)^6(u^{86}+4u^{85}+\cdots-20u-17)$
c_3	$u^3(u^2+2)^3(u^{86}-u^{85}+\cdots-8992u+16424)$
c_4, c_9, c_{10}	$u^3(u^2+2)^3(u^{86}+u^{85}+\cdots+16u+8)$
c_5	$((u-1)^6)(u+1)^3(u^{86}+4u^{85}+\cdots-20u-17)$
c_6, c_8	$(u^3-u^2+1)(u^3+u^2-1)^2(u^{86}+2u^{85}+\cdots-11367u-2391)$
c_7	$((u^3-u^2+2u-1)^2)(u^3+u^2+2u+1)(u^{86}-2u^{85}+\cdots-3u-3)$
c_{11}, c_{12}	$(u^3-u^2+2u-1)(u^3+u^2+2u+1)^2(u^{86}-2u^{85}+\cdots-3u-3)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^{86}+14y^{85}+\cdots-1.94636\times 10^7 y+83521)$
c_2, c_5	$((y-1)^9)(y^{86}-42y^{85}+\cdots-8016y+289)$
c_3	$y^3(y+2)^6(y^{86}-5y^{85}+\cdots-1.23422\times 10^9 y+2.69748\times 10^8)$
c_4, c_9, c_{10}	$y^3(y+2)^6(y^{86}+79y^{85}+\cdots-1280y+64)$
c_6, c_8	$((y^3-y^2+2y-1)^3)(y^{86}-56y^{85}+\cdots+6.80871\times 10^7 y+5716881)$
c_7, c_{11}, c_{12}	$((y^3+3y^2+2y-1)^3)(y^{86}+72y^{85}+\cdots+51y+9)$