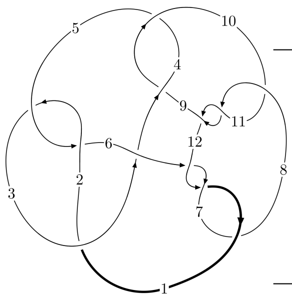
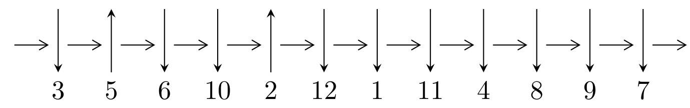
$12a_{0036}$ $(K12a_{0036})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &-3.71327\times10^{48}u^{35}+4.04621\times10^{50}u^{34}+\cdots+1.08619\times10^{53}d-2.28969\times10^{52},\\
&5.92442\times10^{49}u^{35}-1.37260\times10^{51}u^{34}+\cdots+2.17237\times10^{53}c-1.61328\times10^{53},\\
&1.56429\times10^{50}u^{35}-1.90035\times10^{51}u^{34}+\cdots+1.08619\times10^{53}b+1.05897\times10^{53},\\
&-1.77635\times10^{50}u^{35}+8.48997\times10^{50}u^{34}+\cdots+1.08619\times10^{53}a-1.56178\times10^{53},\\
&u^{36}-3u^{35}+\cdots-64u+32\rangle\\
I_2^u = \langle &1.13466\times10^{15}au^{27}-3.06796\times10^{15}u^{27}+\cdots+2.79964\times10^{15}a-1.43321\times10^{16},\\
&-6.13592\times10^{15}au^{27}-7.57070\times10^{15}u^{27}+\cdots-2.86643\times10^{16}a-2.56902\times10^{16},\ b+1,\\
&2.13254\times10^{15}au^{27}+1.47729\times10^{16}u^{27}+\cdots+2.93914\times10^{16}a+7.21477\times10^{16},\ u^{28}+u^{27}+\cdots+8u+4
\end{aligned}$$

$$\begin{aligned}
I_1^v &= \langle a,\ d,\ c-1,\ b+1,\ v^2+v+1\rangle\\
I_2^v &= \langle a,\ d-1,\ c+a,\ b+1,\ v^2+v+1\rangle\\
I_3^v &= \langle a,\ d-1,\ c+a+1,\ b+1,\ v+1\rangle\\
I_4^v &= \langle c,\ d-1,\ cb-a-1,\ v^2ba+v^2c+v^2b+2v^2a+cv+av+2v^2+c+v,\ b^2v^2+2v^2b+bv+v^2+v+1\rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}}=0$, with total 97 representations.
* 1 irreducible components of $\dim_{\mathbb{C}}=1$

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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. $\boldsymbol{I_1^u = \langle -3.71 \times 10^{48} u^{35} + 4.05 \times 10^{50} u^{34} + \cdots + 1.09 \times 10^{53} d - 2.29 \times 10^{52},\ 5.92 \times 10^{49} u^{35} - 1.37 \times 10^{51} u^{34} + \cdots + 2.17 \times 10^{53} c - 1.61 \times 10^{53},\ 1.56 \times 10^{50} u^{35} - 1.90 \times 10^{51} u^{34} + \cdots + 1.09 \times 10^{53} b + 1.06 \times 10^{53},\ -1.78 \times 10^{50} u^{35} + 8.49 \times 10^{50} u^{34} + \cdots + 1.09 \times 10^{53} a - 1.56 \times 10^{53},\ u^{36} - 3u^{35} + \cdots - 64u + 32 \rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.00163541u^{35} - 0.00781632u^{34} + \cdots - 1.02250u + 1.43786 \\ -0.00144017u^{35} + 0.0174956u^{34} + \cdots + 2.23968u - 0.974944 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.000272717u^{35} + 0.00631846u^{34} + \cdots + 0.563935u + 0.742637 \\ 0.0000341864u^{35} - 0.00372516u^{34} + \cdots - 0.444645u + 0.210801 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0000432971u^{35} + 0.0122726u^{34} + \cdots + 1.33646u + 0.416353 \\ 0.00188305u^{35} - 0.0189570u^{34} + \cdots - 2.03361u + 0.857265 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.000904113u^{35} - 0.00884304u^{34} + \cdots - 1.47566u + 1.66218 \\ -0.000947410u^{35} + 0.0211156u^{34} + \cdots + 2.81213u - 1.24583 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.00194611u^{35} - 0.00144413u^{34} + \cdots + 2.53686u - 0.189589 \\ 0.0137165u^{35} - 0.0449480u^{34} + \cdots - 0.634013u + 0.309094 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.00349030u^{35} - 0.000257565u^{34} + \cdots + 3.44348u - 0.336815 \\ 0.0131839u^{35} - 0.0436398u^{34} + \cdots - 1.21762u + 0.270108 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.000238531u^{35} + 0.00259330u^{34} + \cdots + 0.119290u + 0.953438 \\ 0.0000341864u^{35} - 0.00372516u^{34} + \cdots - 0.444645u + 0.210801 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.000238531u^{35} + 0.00259330u^{34} + \cdots + 0.119290u + 0.953438 \\ 0.000492763u^{35} + 0.00362002u^{34} + \cdots + 0.572452u - 0.270888 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0805025u^{35} - 0.242112u^{34} + \cdots + 5.72407u - 9.52193$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{36} + 17u^{35} + \cdots - 120u + 16$
c_2, c_5	$u^{36} + u^{35} + \cdots + 16u + 4$
c_3	$u^{36} - u^{35} + \cdots - 104u + 1252$
c_4, c_9	$u^{36} + 3u^{35} + \cdots + 64u + 32$
c_6, c_7, c_8 c_{10}, c_{11}, c_{12}	$u^{36} - 5u^{35} + \cdots + 3u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{36} + 5y^{35} + \cdots - 27936y + 256$
c_2, c_5	$y^{36} + 17y^{35} + \cdots - 120y + 16$
c_3	$y^{36} - 7y^{35} + \cdots - 22103608y + 1567504$
c_4, c_9	$y^{36} - 15y^{35} + \cdots - 1024y + 1024$
c_6, c_7, c_8 c_{10}, c_{11}, c_{12}	$y^{36} - 41y^{35} + \cdots - 21y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.956534 + 0.246505I$ $a = -0.0142428 + 0.0350628I$ $b = 0.595799 - 0.651291I$ $c = 0.141093 - 0.856670I$ $d = 0.446161 + 0.609262I$	$-2.56616 - 0.65266I$	$-13.12638 + 3.31133I$
$u = 0.956534 - 0.246505I$ $a = -0.0142428 - 0.0350628I$ $b = 0.595799 + 0.651291I$ $c = 0.141093 + 0.856670I$ $d = 0.446161 - 0.609262I$	$-2.56616 + 0.65266I$	$-13.12638 - 3.31133I$
$u = -0.935949 + 0.527292I$ $a = -0.118634 + 0.273971I$ $b = 0.711040 + 0.301202I$ $c = 0.364553 + 1.079240I$ $d = 0.236726 - 0.726179I$	$1.36964 + 3.10356I$	$-5.16268 - 4.71165I$
$u = -0.935949 - 0.527292I$ $a = -0.118634 - 0.273971I$ $b = 0.711040 - 0.301202I$ $c = 0.364553 - 1.079240I$ $d = 0.236726 + 0.726179I$	$1.36964 - 3.10356I$	$-5.16268 + 4.71165I$
$u = -0.651308 + 0.620650I$ $a = 0.088381 + 0.613358I$ $b = 0.525117 + 0.024485I$ $c = 0.711979 + 1.024680I$ $d = 0.018859 - 0.596676I$	$2.25394 + 1.43184I$	$-2.05632 - 3.52848I$
$u = -0.651308 - 0.620650I$ $a = 0.088381 - 0.613358I$ $b = 0.525117 - 0.024485I$ $c = 0.711979 - 1.024680I$ $d = 0.018859 + 0.596676I$	$2.25394 - 1.43184I$	$-2.05632 + 3.52848I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.134519 + 0.831817I$ $a = -2.49461 + 0.46036I$ $b = 5.38486 - 0.94232I$ $c = -0.800905 - 0.073407I$ $d = 1.245840 + 0.061269I$	$-4.07214 - 2.53804I$	$-12.12047 + 3.16226I$
$u = -0.134519 - 0.831817I$ $a = -2.49461 - 0.46036I$ $b = 5.38486 + 0.94232I$ $c = -0.800905 + 0.073407I$ $d = 1.245840 - 0.061269I$	$-4.07214 + 2.53804I$	$-12.12047 - 3.16226I$
$u = 0.488093 + 0.675929I$ $a = 0.219986 - 0.913847I$ $b = 0.439268 + 0.155961I$ $c = 0.951048 - 1.034360I$ $d = -0.119169 + 0.531960I$	$0.92725 + 3.15352I$	$-4.07893 - 3.45921I$
$u = 0.488093 - 0.675929I$ $a = 0.219986 + 0.913847I$ $b = 0.439268 - 0.155961I$ $c = 0.951048 + 1.034360I$ $d = -0.119169 - 0.531960I$	$0.92725 - 3.15352I$	$-4.07893 + 3.45921I$
$u = 1.066500 + 0.529753I$ $a = -0.230642 - 0.205554I$ $b = 0.835462 - 0.357382I$ $c = 0.257325 - 1.157650I$ $d = 0.296959 + 0.811036I$	$-0.85359 - 7.85577I$	$-9.34096 + 8.43490I$
$u = 1.066500 - 0.529753I$ $a = -0.230642 + 0.205554I$ $b = 0.835462 + 0.357382I$ $c = 0.257325 + 1.157650I$ $d = 0.296959 - 0.811036I$	$-0.85359 + 7.85577I$	$-9.34096 - 8.43490I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.471804+1.201650I$ $a=-1.55056+0.44817I$ $b=3.43387-0.95934I$ $c=-1.009840-0.265513I$ $d=1.41953+0.22707I$	$-6.92260-4.39379I$	$-12.55418+2.40542I$
$u=-0.471804-1.201650I$ $a=-1.55056-0.44817I$ $b=3.43387+0.95934I$ $c=-1.009840+0.265513I$ $d=1.41953-0.22707I$	$-6.92260+4.39379I$	$-12.55418-2.40542I$
$u=1.232210+0.408112I$ $a=1.16290-2.88555I$ $b=3.50484-0.82980I$ $c=-0.478569+1.058540I$ $d=-1.43441-0.19589I$	$-8.11992-1.67660I$	$-15.7568+0.9806I$
$u=1.232210-0.408112I$ $a=1.16290+2.88555I$ $b=3.50484+0.82980I$ $c=-0.478569-1.058540I$ $d=-1.43441+0.19589I$	$-8.11992+1.67660I$	$-15.7568-0.9806I$
$u=-1.223950+0.516090I$ $a=0.35261+3.02077I$ $b=3.33397+0.96426I$ $c=-0.310513-1.254720I$ $d=-1.43061+0.24878I$	$-7.33125+7.52384I$	$-14.0983-6.1679I$
$u=-1.223950-0.516090I$ $a=0.35261-3.02077I$ $b=3.33397-0.96426I$ $c=-0.310513+1.254720I$ $d=-1.43061-0.24878I$	$-7.33125-7.52384I$	$-14.0983+6.1679I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.666134 + 0.068993I$ $a = 0.780189 + 0.682100I$ $b = -0.90161 - 1.52116I$ $c = -0.128853 - 0.268419I$ $d = 0.706776 + 0.200522I$	$-2.77509 - 2.72721I$	$-16.6085 + 5.9652I$
$u = -0.666134 - 0.068993I$ $a = 0.780189 - 0.682100I$ $b = -0.90161 + 1.52116I$ $c = -0.128853 + 0.268419I$ $d = 0.706776 - 0.200522I$	$-2.77509 + 2.72721I$	$-16.6085 - 5.9652I$
$u = 0.318666 + 1.335800I$ $a = -1.57860 - 0.26349I$ $b = 3.47760 + 0.56643I$ $c = -1.083360 + 0.176981I$ $d = 1.48437 - 0.15238I$	$-11.42670 + 0.95860I$	$-17.6650 + 0.2050I$
$u = 0.318666 - 1.335800I$ $a = -1.57860 + 0.26349I$ $b = 3.47760 - 0.56643I$ $c = -1.083360 - 0.176981I$ $d = 1.48437 + 0.15238I$	$-11.42670 - 0.95860I$	$-17.6650 - 0.2050I$
$u = 0.568640 + 1.285090I$ $a = -1.44127 - 0.41824I$ $b = 3.20069 + 0.90828I$ $c = -1.059710 + 0.318993I$ $d = 1.46105 - 0.27427I$	$-9.63713 + 9.42250I$	$-15.4804 - 5.9490I$
$u = 0.568640 - 1.285090I$ $a = -1.44127 + 0.41824I$ $b = 3.20069 - 0.90828I$ $c = -1.059710 - 0.318993I$ $d = 1.46105 + 0.27427I$	$-9.63713 - 9.42250I$	$-15.4804 + 5.9490I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.579877$ $a = 0.700882$ $b = -0.382079$ $c = 0.313536$ $d = 0.400496$	-0.811618	-12.0290
$u = -1.27702 + 0.74720I$ $a = -0.79571 + 2.33781I$ $b = 2.94232 + 0.99996I$ $c = 0.11920 - 1.42161I$ $d = -1.45945 + 0.36293I$	$-9.5381 + 11.3478I$	$-13.0594 - 5.6672I$
$u = -1.27702 - 0.74720I$ $a = -0.79571 - 2.33781I$ $b = 2.94232 - 0.99996I$ $c = 0.11920 + 1.42161I$ $d = -1.45945 - 0.36293I$	$-9.5381 - 11.3478I$	$-13.0594 + 5.6672I$
$u = 1.51924$ $a = 1.38331$ $b = 3.36154$ $c = -0.179172$ $d = -1.57128$	-14.8609	-15.8600
$u = 1.29117 + 0.81558I$ $a = -0.98989 - 2.12524I$ $b = 2.84808 - 0.99055I$ $c = 0.22492 + 1.45088I$ $d = -1.46798 - 0.39682I$	$-12.0349 - 16.8809I$	$-15.3736 + 9.2575I$
$u = 1.29117 - 0.81558I$ $a = -0.98989 + 2.12524I$ $b = 2.84808 + 0.99055I$ $c = 0.22492 - 1.45088I$ $d = -1.46798 + 0.39682I$	$-12.0349 + 16.8809I$	$-15.3736 - 9.2575I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.111921 + 0.451208I$ $a = 1.46514 - 0.45120I$ $b = -0.0451061 + 0.0894307I$ $c = 1.40357 - 0.27941I$ $d = -0.190856 + 0.111820I$	$-0.30692 - 1.79670I$	$-2.13838 + 3.34715I$
$u = 0.111921 - 0.451208I$ $a = 1.46514 + 0.45120I$ $b = -0.0451061 - 0.0894307I$ $c = 1.40357 + 0.27941I$ $d = -0.190856 - 0.111820I$	$-0.30692 + 1.79670I$	$-2.13838 - 3.34715I$
$u = 1.38860 + 0.67758I$ $a = -0.35175 - 2.03094I$ $b = 2.99578 - 0.83109I$ $c = 0.126360 + 1.208340I$ $d = -1.51341 - 0.32643I$	$-15.0030 - 8.0885I$	$-18.3300 + 3.8436I$
$u = 1.38860 - 0.67758I$ $a = -0.35175 + 2.03094I$ $b = 2.99578 + 0.83109I$ $c = 0.126360 - 1.208340I$ $d = -1.51341 + 0.32643I$	$-15.0030 + 8.0885I$	$-18.3300 - 3.8436I$
$u = -1.61122 + 0.12770I$ $a = 0.954593 + 0.434273I$ $b = 3.22829 + 0.14916I$ $c = 0.004513 - 0.218310I$ $d = -1.61501 + 0.06033I$	$-18.8051 + 4.7571I$	$-19.1049 - 3.2273I$
$u = -1.61122 - 0.12770I$ $a = 0.954593 - 0.434273I$ $b = 3.22829 - 0.14916I$ $c = 0.004513 + 0.218310I$ $d = -1.61501 - 0.06033I$	$-18.8051 - 4.7571I$	$-19.1049 + 3.2273I$

II.

$$\boldsymbol{I^u_2 = \langle 1.13\times10^{15}au^{27} - 3.07\times10^{15}u^{27} + \cdots + 2.80\times10^{15}a - 1.43\times10^{16},\ -6.14\times10^{15}au^{27} - 7.57\times10^{15}u^{27} + \cdots - 2.87\times10^{16}a - 2.57\times10^{16},\ b+1,\ 2.13\times10^{15}au^{27} + 1.48\times10^{16}u^{27} + \cdots + 2.94\times10^{16}a + 7.21\times10^{16},\ u^{28} + u^{27} + \cdots + 8u + 4\rangle}$$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} a \\ -1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 2.97137au^{27} + 3.66617u^{27} + \cdots + 13.8809a + 12.4407 \\ -1.09893au^{27} + 2.97137u^{27} + \cdots - 2.71150a + 13.8809 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1.87244u^{27} - 0.749749u^{26} + \cdots - 7.03105u - 11.1694 \\ 1.09893u^{27} - 0.185171u^{26} + \cdots + 5.48839u + 2.71150 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.333289u^{27} - 0.505230u^{26} + \cdots - 0.0509032u - 3.96717 \\ -1.53915u^{27} - 0.244519u^{26} + \cdots - 6.98014u - 7.20224 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -3.54326u^{27} - 0.280326u^{26} + \cdots - 16.6119u - 14.7552 \\ 0.187465u^{27} - 0.126714u^{26} + \cdots + 1.72320u + 0.0904714 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -2.49289u^{27} - 0.296873u^{26} + \cdots - 11.3968u - 10.5619 \\ 0.0560178u^{27} - 0.0365360u^{26} + \cdots + 0.841877u + 0.164880 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1.87244au^{27} + 6.63754u^{27} + \cdots + 11.1694a + 26.3216 \\ -1.09893au^{27} + 2.97137u^{27} + \cdots - 2.71150a + 13.8809 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1.87244au^{27} + 6.63754u^{27} + \cdots + 11.1694a + 26.3216 \\ 1.53915au^{27} + 1.87244u^{27} + \cdots + 7.20224a + 9.16941 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{37274533074785}{129063433504426}u^{27} + \frac{53621307092165}{129063433504426}u^{26} + \cdots + \frac{660629047616669}{129063433504426}u - \frac{645502044434670}{64531716752213}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{28} + 14u^{27} + \cdots + 2u + 1)^2$
c_2, c_5	$(u^{28} + 2u^{27} + \cdots + 2u + 1)^2$
c_3	$(u^{28} - 2u^{27} + \cdots - 22u + 17)^2$
c_4, c_9	$(u^{28} - u^{27} + \cdots - 8u + 4)^2$
c_6, c_7, c_8 c_{10}, c_{11}, c_{12}	$u^{56} - 3u^{55} + \cdots + 72u + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{28} + 2y^{27} + \cdots + 14y + 1)^2$
c_2, c_5	$(y^{28} + 14y^{27} + \cdots + 2y + 1)^2$
c_3	$(y^{28} - 10y^{27} + \cdots - 246y + 289)^2$
c_4, c_9	$(y^{28} - 15y^{27} + \cdots - 88y + 16)^2$
c_6, c_7, c_8 c_{10}, c_{11}, c_{12}	$y^{56} - 43y^{55} + \cdots + 736y + 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.910131 + 0.395689I$ $a = -1.02788 + 1.10315I$ $b = -1.00000$ $c = -1.20522 + 1.86019I$ $d = -1.276980 - 0.186733I$	$-1.72215 - 4.24816I$	$-10.11355 + 6.97904I$
$u = 0.910131 + 0.395689I$ $a = -0.01361 + 2.44534I$ $b = -1.00000$ $c = 0.300677 - 0.944242I$ $d = 0.313357 + 0.643423I$	$-1.72215 - 4.24816I$	$-10.11355 + 6.97904I$
$u = 0.910131 - 0.395689I$ $a = -1.02788 - 1.10315I$ $b = -1.00000$ $c = -1.20522 - 1.86019I$ $d = -1.276980 + 0.186733I$	$-1.72215 + 4.24816I$	$-10.11355 - 6.97904I$
$u = 0.910131 - 0.395689I$ $a = -0.01361 - 2.44534I$ $b = -1.00000$ $c = 0.300677 + 0.944242I$ $d = 0.313357 - 0.643423I$	$-1.72215 + 4.24816I$	$-10.11355 - 6.97904I$
$u = -0.017123 + 0.961380I$ $a = 0.177063 - 0.402321I$ $b = -1.00000$ $c = -0.873117 - 0.009489I$ $d = 1.306640 + 0.007988I$	$-4.61196 + 1.34593I$	$-13.91932 - 0.66126I$
$u = -0.017123 + 0.961380I$ $a = 1.58097 + 1.51341I$ $b = -1.00000$ $c = 1.50836 + 1.81823I$ $d = -0.638546 - 0.533764I$	$-4.61196 + 1.34593I$	$-13.91932 - 0.66126I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.017123-0.961380I$ $a=\ \ 0.177063+0.402321I$ $b=-1.00000$ $c=-0.873117+0.009489I$ $d=\ \ 1.306640-0.007988I$	$-4.61196-1.34593I$	$-13.91932+0.66126I$
$u=-0.017123-0.961380I$ $a=\ \ 1.58097-1.51341I$ $b=-1.00000$ $c=\ \ 1.50836-1.81823I$ $d=-0.638546+0.533764I$	$-4.61196-1.34593I$	$-13.91932+0.66126I$
$u=-0.907099+0.252760I$ $a=\ \ 0.971495+0.463170I$ $b=-1.00000$ $c=\ \ 0.186210+0.817511I$ $d=\ \ 0.419544-0.572998I$	$-2.63794+3.28147I$	$-13.2327-4.9939I$
$u=-0.907099+0.252760I$ $a=\ \ 0.704043-0.365524I$ $b=-1.00000$ $c=-0.351737-0.579401I$ $d=\ \ 0.859190+0.455166I$	$-2.63794+3.28147I$	$-13.2327-4.9939I$
$u=-0.907099-0.252760I$ $a=\ \ 0.971495-0.463170I$ $b=-1.00000$ $c=\ \ 0.186210-0.817511I$ $d=\ \ 0.419544+0.572998I$	$-2.63794-3.28147I$	$-13.2327+4.9939I$
$u=-0.907099-0.252760I$ $a=\ \ 0.704043+0.365524I$ $b=-1.00000$ $c=-0.351737+0.579401I$ $d=\ \ 0.859190-0.455166I$	$-2.63794-3.28147I$	$-13.2327+4.9939I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.387411 + 0.832689I$ $a = 0.365520 + 0.349527I$ $b = -1.00000$ $c = -0.795695 + 0.216194I$ $d = 1.239370 - 0.180444I$	$-1.43770 + 1.40144I$	$-7.30053 - 1.74630I$
$u = 0.387411 + 0.832689I$ $a = 1.42688 - 0.89203I$ $b = -1.00000$ $c = 1.11790 - 1.26235I$ $d = -0.279611 + 0.583432I$	$-1.43770 + 1.40144I$	$-7.30053 - 1.74630I$
$u = 0.387411 - 0.832689I$ $a = 0.365520 - 0.349527I$ $b = -1.00000$ $c = -0.795695 - 0.216194I$ $d = 1.239370 + 0.180444I$	$-1.43770 - 1.40144I$	$-7.30053 + 1.74630I$
$u = 0.387411 - 0.832689I$ $a = 1.42688 + 0.89203I$ $b = -1.00000$ $c = 1.11790 + 1.26235I$ $d = -0.279611 - 0.583432I$	$-1.43770 - 1.40144I$	$-7.30053 + 1.74630I$
$u = -0.387502 + 1.047530I$ $a = 0.340954 - 0.431763I$ $b = -1.00000$ $c = -0.920428 - 0.218491I$ $d = 1.344350 + 0.185032I$	$-3.70255 - 5.75423I$	$-11.89302 + 5.96655I$
$u = -0.387502 + 1.047530I$ $a = 1.27979 + 1.06278I$ $b = -1.00000$ $c = 1.05142 + 1.53293I$ $d = -0.382179 - 0.735842I$	$-3.70255 - 5.75423I$	$-11.89302 + 5.96655I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.387502-1.047530I$ $a=\ \ 0.340954+0.431763I$ $b=-1.00000$ $c=-0.920428+0.218491I$ $d=\ \ 1.344350-0.185032I$	$-3.70255+5.75423I$	$-11.89302-5.96655I$
$u=-0.387502-1.047530I$ $a=\ \ 1.27979-1.06278I$ $b=-1.00000$ $c=\ \ 1.05142-1.53293I$ $d=-0.382179+0.735842I$	$-3.70255+5.75423I$	$-11.89302-5.96655I$
$u=-0.802767+0.244916I$ $a=-2.05210-1.27314I$ $b=-1.00000$ $c=-2.29143-1.82037I$ $d=-1.229860+0.111546I$	$-2.32218-0.90628I$	$-12.59768-1.67094I$
$u=-0.802767+0.244916I$ $a=-0.72932-2.54382I$ $b=-1.00000$ $c=\ \ 0.273098+0.711267I$ $d=\ \ 0.374376-0.483492I$	$-2.32218-0.90628I$	$-12.59768-1.67094I$
$u=-0.802767-0.244916I$ $a=-2.05210+1.27314I$ $b=-1.00000$ $c=-2.29143+1.82037I$ $d=-1.229860-0.111546I$	$-2.32218+0.90628I$	$-12.59768+1.67094I$
$u=-0.802767-0.244916I$ $a=-0.72932+2.54382I$ $b=-1.00000$ $c=\ \ 0.273098-0.711267I$ $d=\ \ 0.374376+0.483492I$	$-2.32218+0.90628I$	$-12.59768+1.67094I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.147340 + 0.340892I$ $a = -0.224291 + 1.144170I$ $b = -1.00000$ $c = -0.471254 - 0.771751I$ $d = 0.938913 + 0.621780I$	$-5.81300 + 1.47542I$	$-13.29345 - 0.59666I$
$u = -1.147340 + 0.340892I$ $a = -1.07497 - 1.33487I$ $b = -1.00000$ $c = -0.776477 - 1.062760I$ $d = -1.393270 + 0.163069I$	$-5.81300 + 1.47542I$	$-13.29345 - 0.59666I$
$u = -1.147340 - 0.340892I$ $a = -0.224291 - 1.144170I$ $b = -1.00000$ $c = -0.471254 + 0.771751I$ $d = 0.938913 - 0.621780I$	$-5.81300 - 1.47542I$	$-13.29345 + 0.59666I$
$u = -1.147340 - 0.340892I$ $a = -1.07497 + 1.33487I$ $b = -1.00000$ $c = -0.776477 + 1.062760I$ $d = -1.393270 - 0.163069I$	$-5.81300 - 1.47542I$	$-13.29345 + 0.59666I$
$u = 0.611767 + 0.458091I$ $a = 1.235620 - 0.499323I$ $b = -1.00000$ $c = 0.669435 - 0.799308I$ $d = 0.099411 + 0.470368I$	$-0.887541 + 0.644142I$	$-7.64602 + 1.30683I$
$u = 0.611767 + 0.458091I$ $a = 0.552061 + 0.278825I$ $b = -1.00000$ $c = -0.542285 + 0.331792I$ $d = 1.027130 - 0.267751I$	$-0.887541 + 0.644142I$	$-7.64602 + 1.30683I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.611767 - 0.458091I$ $a = \ \ 1.235620 + 0.499323I$ $b = -1.00000$ $c = \ \ 0.669435 + 0.799308I$ $d = \ \ 0.099411 - 0.470368I$	$-0.887541 - 0.644142I$	$-7.64602 - 1.30683I$
$u = \ \ 0.611767 - 0.458091I$ $a = \ \ 0.552061 - 0.278825I$ $b = -1.00000$ $c = -0.542285 - 0.331792I$ $d = \ \ 1.027130 + 0.267751I$	$-0.887541 - 0.644142I$	$-7.64602 - 1.30683I$
$u = \ \ 1.175470 + 0.589984I$ $a = -0.299231 + 0.442331I$ $b = -1.00000$ $c = -0.23958 + 1.44120I$ $d = -1.40691 - 0.28559I$	$-3.88965 - 6.77427I$	$-10.22594 + 4.95962I$
$u = \ \ 1.175470 + 0.589984I$ $a = \ \ 0.42258 + 1.93124I$ $b = -1.00000$ $c = \ \ 0.209555 - 1.262070I$ $d = \ \ 0.307742 + 0.904345I$	$-3.88965 - 6.77427I$	$-10.22594 + 4.95962I$
$u = \ \ 1.175470 - 0.589984I$ $a = -0.299231 - 0.442331I$ $b = -1.00000$ $c = -0.23958 - 1.44120I$ $d = -1.40691 + 0.28559I$	$-3.88965 + 6.77427I$	$-10.22594 - 4.95962I$
$u = \ \ 1.175470 - 0.589984I$ $a = \ \ 0.42258 - 1.93124I$ $b = -1.00000$ $c = \ \ 0.209555 + 1.262070I$ $d = \ \ 0.307742 - 0.904345I$	$-3.88965 + 6.77427I$	$-10.22594 - 4.95962I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 1.312590 + 0.177484I$ $a = -0.920187 + 0.871890I$ $b = -1.00000$ $c = -0.575440 + 0.451407I$ $d = -1.47301 - 0.08468I$	$-9.90219 + 2.08114I$	$-17.7960 - 2.7886I$
$u = \ \ 1.312590 + 0.177484I$ $a = -0.113586 - 1.304510I$ $b = -1.00000$ $c = -0.391157 + 0.943404I$ $d = \ \ 0.853841 - 0.754977I$	$-9.90219 + 2.08114I$	$-17.7960 - 2.7886I$
$u = \ \ 1.312590 - 0.177484I$ $a = -0.920187 - 0.871890I$ $b = -1.00000$ $c = -0.575440 - 0.451407I$ $d = -1.47301 + 0.08468I$	$-9.90219 - 2.08114I$	$-17.7960 + 2.7886I$
$u = \ \ 1.312590 - 0.177484I$ $a = -0.113586 + 1.304510I$ $b = -1.00000$ $c = -0.391157 - 0.943404I$ $d = \ \ 0.853841 + 0.754977I$	$-9.90219 - 2.08114I$	$-17.7960 + 2.7886I$
$u = \ \ 1.262900 + 0.460239I$ $a = -0.110303 - 1.099220I$ $b = -1.00000$ $c = -0.584732 + 0.832898I$ $d = \ \ 1.027590 - 0.683591I$	$-8.61088 - 6.23266I$	$-16.1498 + 4.3008I$
$u = \ \ 1.262900 + 0.460239I$ $a = -0.73910 + 1.34519I$ $b = -1.00000$ $c = -0.341352 + 1.102730I$ $d = -1.44949 - 0.22125I$	$-8.61088 - 6.23266I$	$-16.1498 + 4.3008I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.262900 - 0.460239I$ $a = -0.110303 + 1.099220I$ $b = -1.00000$ $c = -0.584732 - 0.832898I$ $d = 1.027590 + 0.683591I$	$-8.61088 + 6.23266I$	$-16.1498 - 4.3008I$
$u = 1.262900 - 0.460239I$ $a = -0.73910 - 1.34519I$ $b = -1.00000$ $c = -0.341352 - 1.102730I$ $d = -1.44949 + 0.22125I$	$-8.61088 + 6.23266I$	$-16.1498 - 4.3008I$
$u = -1.280370 + 0.446560I$ $a = -0.502612 - 0.171924I$ $b = -1.00000$ $c = -0.332736 - 1.053240I$ $d = -1.45797 + 0.21451I$	$-8.68474 + 3.62399I$	$-16.2087 - 2.7619I$
$u = -1.280370 + 0.446560I$ $a = 0.25189 - 1.78789I$ $b = -1.00000$ $c = 0.059654 + 1.225020I$ $d = 0.436936 - 0.910395I$	$-8.68474 + 3.62399I$	$-16.2087 - 2.7619I$
$u = -1.280370 - 0.446560I$ $a = -0.502612 + 0.171924I$ $b = -1.00000$ $c = -0.332736 + 1.053240I$ $d = -1.45797 - 0.21451I$	$-8.68474 - 3.62399I$	$-16.2087 + 2.7619I$
$u = -1.280370 - 0.446560I$ $a = 0.25189 + 1.78789I$ $b = -1.00000$ $c = 0.059654 - 1.225020I$ $d = 0.436936 + 0.910395I$	$-8.68474 - 3.62399I$	$-16.2087 + 2.7619I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.376924+0.508425I$ $a=-0.304778+0.396413I$ $b=-1.00000$ $c=-0.608002-0.187738I$ $d=\ \ 1.085050+0.152783I$	$-3.51302+1.43304I$	$-13.5823-4.9760I$
$u=-0.376924+0.508425I$ $a=\ \ 0.96605-5.26986I$ $b=-1.00000$ $c=\ \ 1.01842-5.30238I$ $d=-0.999265+0.195824I$	$-3.51302+1.43304I$	$-13.5823-4.9760I$
$u=-0.376924-0.508425I$ $a=-0.304778-0.396413I$ $b=-1.00000$ $c=-0.608002+0.187738I$ $d=\ \ 1.085050-0.152783I$	$-3.51302-1.43304I$	$-13.5823+4.9760I$
$u=-0.376924-0.508425I$ $a=\ \ 0.96605+5.26986I$ $b=-1.00000$ $c=\ \ 1.01842+5.30238I$ $d=-0.999265-0.195824I$	$-3.51302-1.43304I$	$-13.5823+4.9760I$
$u=-1.241130+0.661367I$ $a=-0.160346-0.333380I$ $b=-1.00000$ $c=-0.043949-1.401630I$ $d=-1.44024+0.32064I$	$-6.41692+11.95450I$	$-13.0412-8.3222I$
$u=-1.241130+0.661367I$ $a=\ \ 0.49740-1.83602I$ $b=-1.00000$ $c=\ \ 0.199842+1.344140I$ $d=\ \ 0.293882-0.972896I$	$-6.41692+11.95450I$	$-13.0412-8.3222I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.241130-0.661367I$ $a=-0.160346+0.333380I$ $b=-1.00000$ $c=-0.043949+1.401630I$ $d=-1.44024-0.32064I$	$-6.41692-11.95450I$	$-13.0412+8.3222I$
$u=-1.241130-0.661367I$ $a=\quad 0.49740+1.83602I$ $b=-1.00000$ $c=\quad 0.199842-1.344140I$ $d=\quad 0.293882+0.972896I$	$-6.41692-11.95450I$	$-13.0412+8.3222I$

III. $I_1^v = \langle a,\ d,\ c-1,\ b+1,\ v^2+v+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4v - 11$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -0.500000 + 0.866025I$ $a = 0$ $b = -1.00000$ $c = 1.00000$ $d = 0$	$-1.64493 + 2.02988I$	$-9.00000 - 3.46410I$
$v = -0.500000 - 0.866025I$ $a = 0$ $b = -1.00000$ $c = 1.00000$ $d = 0$	$-1.64493 - 2.02988I$	$-9.00000 + 3.46410I$

IV. $I_2^v = \langle a,\ d-1,\ c+a,\ b+1,\ v^2+v+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4v - 11$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -0.500000 + 0.866025I$ $a = 0$ $b = -1.00000$ $c = 0$ $d = 1.00000$	$-1.64493 + 2.02988I$	$-9.00000 - 3.46410I$
$v = -0.500000 - 0.866025I$ $a = 0$ $b = -1.00000$ $c = 0$ $d = 1.00000$	$-1.64493 - 2.02988I$	$-9.00000 + 3.46410I$

V. $I_3^v = \langle a,\ d-1,\ c+a+1,\ b+1,\ v+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^v	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -1.00000$ $a = 0$ $b = -1.00000$ $c = -1.00000$ $d = 1.00000$	-3.28987	-12.0000

VI.

$\boldsymbol{I_4^v = \langle c,\ d-1,\ cb-a-1,\ v^2ba+v^2c+\cdots+c+v,\ b^2v^2+2v^2b+\cdots+v+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= b^3v+3b^2v-bv+v^2-3v-16$

(iv) u-Polynomials at the component : It cannot be defined for a positive dimension component.

(v) Riley Polynomials at the component : It cannot be defined for a positive dimension component.

(iv) Complex Volumes and Cusp Shapes

Solution to I_4^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = \cdots$ $a = \cdots$ $b = \cdots$ $c = \cdots$ $d = \cdots$	$-3.28987 - 2.02988I$	$-14.5770 - 3.5248I$

VII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u(u^2-u+1)^2(u^{28}+14u^{27}+\cdots+2u+1)^2$ $\cdot(u^{36}+17u^{35}+\cdots-120u+16)$
c_2	$u(u^2+u+1)^2(u^{28}+2u^{27}+\cdots+2u+1)^2(u^{36}+u^{35}+\cdots+16u+4)$
c_3	$u(u^2-u+1)^2(u^{28}-2u^{27}+\cdots-22u+17)^2$ $\cdot(u^{36}-u^{35}+\cdots-104u+1252)$
c_4, c_9	$u^5(u^{28}-u^{27}+\cdots-8u+4)^2(u^{36}+3u^{35}+\cdots+64u+32)$
c_5	$u(u^2-u+1)^2(u^{28}+2u^{27}+\cdots+2u+1)^2(u^{36}+u^{35}+\cdots+16u+4)$
c_6, c_7	$u^2(u-1)^2(u+1)(u^{36}-5u^{35}+\cdots+3u-1)$ $\cdot(u^{56}-3u^{55}+\cdots+72u+16)$
c_8	$u^2(u-1)^3(u^{36}-5u^{35}+\cdots+3u-1)(u^{56}-3u^{55}+\cdots+72u+16)$
c_{10}, c_{11}	$u^2(u+1)^3(u^{36}-5u^{35}+\cdots+3u-1)(u^{56}-3u^{55}+\cdots+72u+16)$
c_{12}	$u^2(u-1)(u+1)^2(u^{36}-5u^{35}+\cdots+3u-1)$ $\cdot(u^{56}-3u^{55}+\cdots+72u+16)$

VIII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y(y^2+y+1)^2(y^{28}+2y^{27}+\cdots+14y+1)^2$ $\cdot(y^{36}+5y^{35}+\cdots-27936y+256)$
c_2, c_5	$y(y^2+y+1)^2(y^{28}+14y^{27}+\cdots+2y+1)^2$ $\cdot(y^{36}+17y^{35}+\cdots-120y+16)$
c_3	$y(y^2+y+1)^2(y^{28}-10y^{27}+\cdots-246y+289)^2$ $\cdot(y^{36}-7y^{35}+\cdots-22103608y+1567504)$
c_4, c_9	$y^5(y^{28}-15y^{27}+\cdots-88y+16)^2$ $\cdot(y^{36}-15y^{35}+\cdots-1024y+1024)$
c_6, c_7, c_8 c_{10}, c_{11}, c_{12}	$y^2(y-1)^3(y^{36}-41y^{35}+\cdots-21y+1)$ $\cdot(y^{56}-43y^{55}+\cdots+736y+256)$