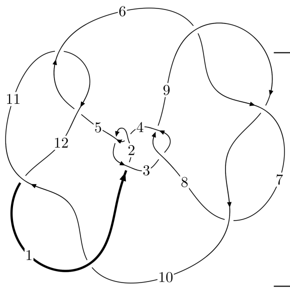
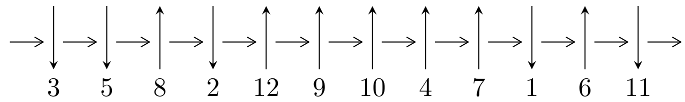
$12a_{0116}$ ($K12a_{0116}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u = \langle & 4.89741 \times 10^{143} u^{70} + 9.51177 \times 10^{143} u^{69} + \cdots + 1.56737 \times 10^{147} d + 3.91135 \times 10^{146}, \\
& 4.81606 \times 10^{144} u^{70} + 8.39188 \times 10^{144} u^{69} + \cdots + 4.38864 \times 10^{148} c - 3.94097 \times 10^{148}, \\
& 8.50193 \times 10^{145} u^{70} + 2.17599 \times 10^{146} u^{69} + \cdots + 5.03271 \times 10^{148} b - 4.36186 \times 10^{148}, \\
& - 1.70391 \times 10^{145} u^{70} - 5.09324 \times 10^{145} u^{69} + \cdots + 5.03271 \times 10^{148} a + 2.97413 \times 10^{148}, \\
& u^{71} + 2u^{70} + \cdots - 1536u^2 + 512 \rangle \\
I_2^u = \langle & 984u^8a^2 + 450u^8a + \cdots + 2162a - 142,\ 10u^8a^2 - 2340u^8a + \cdots + 2307a + 6, \\
& 379u^8a^2 + 2864u^8a + \cdots + 2660a - 2336,\ u^8a + u^8 + \cdots - a - 1, \\
& u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1 \rangle
\end{aligned}
$$

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

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 103 representations.
* 1 irreducible components of $\dim_{\mathbb{C}} = 1$

[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.

$$\boldsymbol{I_1^u = \langle 4.90\times10^{143}u^{70}+9.51\times10^{143}u^{69}+\cdots+1.57\times10^{147}d+3.91\times10^{146},\ 4.82\times10^{144}u^{70}+8.39\times10^{144}u^{69}+\cdots+4.39\times10^{148}c-3.94\times10^{148},\ 8.50\times10^{145}u^{70}+2.18\times10^{146}u^{69}+\cdots+5.03\times10^{148}b-4.36\times10^{148},\ -1.70\times10^{145}u^{70}-5.09\times10^{145}u^{69}+\cdots+5.03\times10^{148}a+2.97\times10^{148},\ u^{71}+2u^{70}+\cdots-1536u^2+512\rangle}$$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_1 = \begin{pmatrix}0.000338567u^{70}+0.00101203u^{69}+\cdots-1.54441u-0.590959\\-0.00168933u^{70}-0.00432370u^{69}+\cdots+3.58313u+0.866702\end{pmatrix}$$

$$a_9 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-0.000109739u^{70}-0.000191218u^{69}+\cdots+0.195370u+0.897994\\-0.000312460u^{70}-0.000606862u^{69}+\cdots+0.402802u-0.249548\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-0.00183569u^{70}-0.00101807u^{69}+\cdots-0.404520u-0.815831\\0.000206711u^{70}-0.00283529u^{69}+\cdots+2.05506u+2.78231\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-u\\u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-0.000272969u^{70}+0.000824654u^{69}+\cdots-2.23600u-0.903349\\-0.00107780u^{70}-0.00413632u^{69}+\cdots+4.27473u+1.17909\end{pmatrix}$$

$$a_5 = \begin{pmatrix}0.00135077u^{70}+0.00331167u^{69}+\cdots-2.03873u-0.275743\\-0.00107780u^{70}-0.00413632u^{69}+\cdots+4.27473u+1.17909\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-0.000109739u^{70}-0.000191218u^{69}+\cdots+0.195370u+0.897994\\0.000398397u^{70}+0.000736742u^{69}+\cdots-0.458988u+0.264017\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-0.000422199u^{70}-0.000798080u^{69}+\cdots+0.598171u+0.648446\\0.000578173u^{70}+0.000945600u^{69}+\cdots-0.618968u+0.273263\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-0.00163584u^{70}-0.00127944u^{69}+\cdots-0.420031u-1.00282\\-0.000707113u^{70}-0.00441555u^{69}+\cdots+2.78684u+2.81850\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.000644196u^{70}-0.0111115u^{69}+\cdots+0.863041u+15.1191$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{71} + 30u^{70} + \cdots + 4640u + 256$
c_2, c_4	$u^{71} - 8u^{70} + \cdots + 56u - 16$
c_3, c_8	$u^{71} - 2u^{70} + \cdots + 1536u^2 - 512$
c_5, c_{11}	$u^{71} + 2u^{70} + \cdots - 5u^2 - 4$
c_6, c_7, c_9	$u^{71} + 8u^{70} + \cdots + 56u - 16$
c_{10}, c_{12}	$u^{71} + 24u^{70} + \cdots - 40u - 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{71} + 30y^{70} + \cdots + 5022208y - 65536$
c_2, c_4	$y^{71} - 30y^{70} + \cdots + 4640y - 256$
c_3, c_8	$y^{71} - 30y^{70} + \cdots + 1572864y - 262144$
c_5, c_{11}	$y^{71} + 24y^{70} + \cdots - 40y - 16$
c_6, c_7, c_9	$y^{71} - 70y^{70} + \cdots - 1504y - 256$
c_{10}, c_{12}	$y^{71} + 48y^{70} + \cdots - 6880y - 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.372595 + 0.922213I$ $a = 0.231527 + 0.248876I$ $b = 0.846890 - 0.552313I$ $c = 0.779729 - 0.752305I$ $d = 0.335802 - 0.640838I$	$-0.206074 - 1.106620I$	$1.82615 + 2.10157I$
$u = 0.372595 - 0.922213I$ $a = 0.231527 - 0.248876I$ $b = 0.846890 + 0.552313I$ $c = 0.779729 + 0.752305I$ $d = 0.335802 + 0.640838I$	$-0.206074 + 1.106620I$	$1.82615 - 2.10157I$
$u = -0.661751 + 0.731261I$ $a = -1.22188 + 0.76837I$ $b = -0.172678 - 1.098140I$ $c = 0.700653 + 0.489800I$ $d = 0.041277 + 0.670208I$	$-5.31233 + 1.23150I$	$-6.16629 - 0.79467I$
$u = -0.661751 - 0.731261I$ $a = -1.22188 - 0.76837I$ $b = -0.172678 + 1.098140I$ $c = 0.700653 - 0.489800I$ $d = 0.041277 - 0.670208I$	$-5.31233 - 1.23150I$	$-6.16629 + 0.79467I$
$u = -0.216094 + 0.961248I$ $a = 0.0234029 - 0.1065430I$ $b = -0.945678 - 0.148881I$ $c = 0.432999 - 0.019039I$ $d = -1.305020 - 0.101353I$	$2.60149 + 2.06138I$	$6.60052 - 3.22142I$
$u = -0.216094 - 0.961248I$ $a = 0.0234029 + 0.1065430I$ $b = -0.945678 + 0.148881I$ $c = 0.432999 + 0.019039I$ $d = -1.305020 + 0.101353I$	$2.60149 - 2.06138I$	$6.60052 + 3.22142I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.510340 + 0.919175I$ $a = 0.422439 + 0.636543I$ $b = 0.777623 - 0.912598I$ $c = 0.433850 + 0.046431I$ $d = -1.278840 + 0.243884I$	$-1.22762 - 4.53498I$	$-0.48837 + 4.83158I$
$u = 0.510340 - 0.919175I$ $a = 0.422439 - 0.636543I$ $b = 0.777623 + 0.912598I$ $c = 0.433850 - 0.046431I$ $d = -1.278840 - 0.243884I$	$-1.22762 + 4.53498I$	$-0.48837 - 4.83158I$
$u = -0.843761 + 0.417994I$ $a = -2.34521 + 0.64153I$ $b = 0.679972 - 0.889234I$ $c = 0.642763 + 0.309103I$ $d = -0.263568 + 0.607646I$	$-1.74336 - 3.95563I$	$0.57229 + 6.63484I$
$u = -0.843761 - 0.417994I$ $a = -2.34521 - 0.64153I$ $b = 0.679972 + 0.889234I$ $c = 0.642763 - 0.309103I$ $d = -0.263568 - 0.607646I$	$-1.74336 + 3.95563I$	$0.57229 - 6.63484I$
$u = 0.980094 + 0.401535I$ $a = 0.396858 + 0.104153I$ $b = -0.149301 - 1.202720I$ $c = 0.587267 - 0.304226I$ $d = -0.342522 - 0.695475I$	$0.13020 + 4.00402I$	$4.41276 - 6.69495I$
$u = 0.980094 - 0.401535I$ $a = 0.396858 - 0.104153I$ $b = -0.149301 + 1.202720I$ $c = 0.587267 + 0.304226I$ $d = -0.342522 + 0.695475I$	$0.13020 - 4.00402I$	$4.41276 + 6.69495I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.482781 + 0.984718I$ $a = -0.188094 + 0.642789I$ $b = -0.975231 - 0.875039I$ $c = 0.678408 + 0.703356I$ $d = 0.289585 + 0.736539I$	$-0.99233 + 6.45679I$	$0.34368 - 6.97496I$
$u = -0.482781 - 0.984718I$ $a = -0.188094 - 0.642789I$ $b = -0.975231 + 0.875039I$ $c = 0.678408 - 0.703356I$ $d = 0.289585 - 0.736539I$	$-0.99233 - 6.45679I$	$0.34368 + 6.97496I$
$u = -0.777198 + 0.427799I$ $a = -0.190894 + 0.697004I$ $b = -0.24801 - 1.87626I$ $c = 0.674459 + 0.312849I$ $d = -0.220144 + 0.565966I$	$-1.94652 + 0.34051I$	$-0.37051 + 3.03065I$
$u = -0.777198 - 0.427799I$ $a = -0.190894 - 0.697004I$ $b = -0.24801 + 1.87626I$ $c = 0.674459 - 0.312849I$ $d = -0.220144 - 0.565966I$	$-1.94652 - 0.34051I$	$-0.37051 - 3.03065I$
$u = -1.127060 + 0.152551I$ $a = 0.892844 + 0.350255I$ $b = -0.849674 + 0.379750I$ $c = -2.51225 - 0.47372I$ $d = 1.384380 - 0.072480I$	$4.50468 + 2.47836I$	$7.49354 - 3.38416I$
$u = -1.127060 - 0.152551I$ $a = 0.892844 - 0.350255I$ $b = -0.849674 - 0.379750I$ $c = -2.51225 + 0.47372I$ $d = 1.384380 + 0.072480I$	$4.50468 - 2.47836I$	$7.49354 + 3.38416I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.982347+0.611518I$ $a=-1.043830+0.376477I$ $b=\ \ 0.83985-1.62811I$ $c=\ \ 0.577038+0.381219I$ $d=-0.206434+0.797028I$	$-4.29573-6.37313I$	$-3.00781+7.19219I$
$u=-0.982347-0.611518I$ $a=-1.043830-0.376477I$ $b=\ \ 0.83985+1.62811I$ $c=\ \ 0.577038-0.381219I$ $d=-0.206434-0.797028I$	$-4.29573+6.37313I$	$-3.00781-7.19219I$
$u=-1.173990+0.222972I$ $a=\ \ 1.082200+0.369743I$ $b=-0.979927+0.355538I$ $c=\ \ 0.478067-0.168003I$ $d=-0.861829-0.654286I$	$5.09577-1.83902I$	$8.24819+0.I$
$u=-1.173990-0.222972I$ $a=\ \ 1.082200-0.369743I$ $b=-0.979927-0.355538I$ $c=\ \ 0.478067+0.168003I$ $d=-0.861829+0.654286I$	$5.09577+1.83902I$	$8.24819+0.I$
$u=\ \ 1.203430+0.094057I$ $a=-0.832154+0.565988I$ $b=\ \ 0.782311+0.231668I$ $c=\ \ 0.487795+0.191279I$ $d=-0.776824+0.696746I$	$5.36659-3.89584I$	$8.41567+5.55146I$
$u=\ \ 1.203430-0.094057I$ $a=-0.832154-0.565988I$ $b=\ \ 0.782311-0.231668I$ $c=\ \ 0.487795-0.191279I$ $d=-0.776824-0.696746I$	$5.36659+3.89584I$	$8.41567-5.55146I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.117530 + 0.478181I$ $a = 1.42291 - 0.12389I$ $b = -1.194070 + 0.739062I$ $c = -1.92995 - 1.17457I$ $d = 1.378100 - 0.230112I$	$3.15531 - 5.12152I$	0
$u = -1.117530 - 0.478181I$ $a = 1.42291 + 0.12389I$ $b = -1.194070 - 0.739062I$ $c = -1.92995 + 1.17457I$ $d = 1.378100 + 0.230112I$	$3.15531 + 5.12152I$	0
$u = 1.137650 + 0.460214I$ $a = 0.741192 - 0.324271I$ $b = -0.613390 - 0.807893I$ $c = -1.94441 + 1.10888I$ $d = 1.388080 + 0.221318I$	$3.19656 + 2.55854I$	0
$u = 1.137650 - 0.460214I$ $a = 0.741192 + 0.324271I$ $b = -0.613390 + 0.807893I$ $c = -1.94441 - 1.10888I$ $d = 1.388080 - 0.221318I$	$3.19656 - 2.55854I$	0
$u = 0.725491 + 0.260568I$ $a = 2.45954 + 0.18676I$ $b = -0.615456 - 0.467489I$ $c = 0.687076 - 0.223450I$ $d = -0.316229 - 0.428062I$	$-1.09934 - 1.05821I$	$3.09814 - 1.72718I$
$u = 0.725491 - 0.260568I$ $a = 2.45954 - 0.18676I$ $b = -0.615456 + 0.467489I$ $c = 0.687076 + 0.223450I$ $d = -0.316229 + 0.428062I$	$-1.09934 + 1.05821I$	$3.09814 + 1.72718I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.247645 + 1.226350I$ $a = 0.445696 - 1.201150I$ $b = -1.18878 + 1.33643I$ $c = 0.410272 + 0.019958I$ $d = -1.43165 + 0.11829I$	$6.94619 + 1.12108I$	0
$u = 0.247645 - 1.226350I$ $a = 0.445696 + 1.201150I$ $b = -1.18878 - 1.33643I$ $c = 0.410272 - 0.019958I$ $d = -1.43165 - 0.11829I$	$6.94619 - 1.12108I$	0
$u = -0.464983 + 0.581438I$ $a = 0.467028 - 0.609266I$ $b = -0.226473 + 0.762464I$ $c = 0.469417 - 0.045212I$ $d = -1.110720 - 0.203295I$	$1.011140 + 0.938516I$	$3.66296 + 0.79830I$
$u = -0.464983 - 0.581438I$ $a = 0.467028 + 0.609266I$ $b = -0.226473 - 0.762464I$ $c = 0.469417 + 0.045212I$ $d = -1.110720 + 0.203295I$	$1.011140 - 0.938516I$	$3.66296 - 0.79830I$
$u = -0.368570 + 1.210560I$ $a = -0.22498 - 1.41639I$ $b = 0.91974 + 1.60894I$ $c = 0.410382 - 0.029911I$ $d = -1.42388 - 0.17667I$	$6.42018 + 4.68044I$	0
$u = -0.368570 - 1.210560I$ $a = -0.22498 + 1.41639I$ $b = 0.91974 - 1.60894I$ $c = 0.410382 + 0.029911I$ $d = -1.42388 + 0.17667I$	$6.42018 - 4.68044I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.248660 + 0.306382I$ $a = -1.35825 + 0.40426I$ $b = 1.185690 + 0.329456I$ $c = -2.03698 + 0.67503I$ $d = 1.44235 + 0.14659I$	$7.51654 + 1.91781I$	0
$u = 1.248660 - 0.306382I$ $a = -1.35825 - 0.40426I$ $b = 1.185690 - 0.329456I$ $c = -2.03698 - 0.67503I$ $d = 1.44235 - 0.14659I$	$7.51654 - 1.91781I$	0
$u = -0.504947 + 1.215580I$ $a = 0.553982 + 0.970050I$ $b = -1.71071 - 1.04995I$ $c = 0.408022 - 0.040917I$ $d = -1.42645 - 0.24333I$	$5.42990 + 4.32973I$	0
$u = -0.504947 - 1.215580I$ $a = 0.553982 - 0.970050I$ $b = -1.71071 + 1.04995I$ $c = 0.408022 + 0.040917I$ $d = -1.42645 + 0.24333I$	$5.42990 - 4.32973I$	0
$u = 1.152900 + 0.667545I$ $a = 1.49225 - 0.13001I$ $b = -1.39286 - 1.11846I$ $c = -1.51029 + 1.23782I$ $d = 1.39607 + 0.32462I$	$0.80414 + 10.42400I$	0
$u = 1.152900 - 0.667545I$ $a = 1.49225 + 0.13001I$ $b = -1.39286 + 1.11846I$ $c = -1.51029 - 1.23782I$ $d = 1.39607 - 0.32462I$	$0.80414 - 10.42400I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.185800 + 0.609579I$ $a = 1.321700 - 0.330477I$ $b = -1.23211 - 0.88467I$ $c = 0.512898 - 0.362376I$ $d = -0.300514 - 0.918848I$	$2.33908 + 6.73341I$	0
$u = 1.185800 - 0.609579I$ $a = 1.321700 + 0.330477I$ $b = -1.23211 + 0.88467I$ $c = 0.512898 + 0.362376I$ $d = -0.300514 + 0.918848I$	$2.33908 - 6.73341I$	0
$u = 0.593784 + 1.208600I$ $a = -0.434729 + 1.290470I$ $b = 1.63973 - 1.36961I$ $c = 0.406921 + 0.048241I$ $d = -1.42342 + 0.28730I$	$4.48821 - 10.17210I$	0
$u = 0.593784 - 1.208600I$ $a = -0.434729 - 1.290470I$ $b = 1.63973 + 1.36961I$ $c = 0.406921 - 0.048241I$ $d = -1.42342 - 0.28730I$	$4.48821 + 10.17210I$	0
$u = -1.233000 + 0.545251I$ $a = -1.135370 - 0.579184I$ $b = 1.066230 - 0.598971I$ $c = -1.68270 - 1.01731I$ $d = 1.43521 - 0.26312I$	$5.82408 - 7.48275I$	0
$u = -1.233000 - 0.545251I$ $a = -1.135370 + 0.579184I$ $b = 1.066230 + 0.598971I$ $c = -1.68270 + 1.01731I$ $d = 1.43521 + 0.26312I$	$5.82408 + 7.48275I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.176438 + 0.617781I$ $a = 0.569269 - 0.700050I$ $b = 0.224168 - 0.149459I$ $c = 0.464689 + 0.015931I$ $d = -1.149450 + 0.073691I$	$0.42738 + 1.60074I$	$0.77404 - 2.18898I$
$u = 0.176438 - 0.617781I$ $a = 0.569269 + 0.700050I$ $b = 0.224168 + 0.149459I$ $c = 0.464689 - 0.015931I$ $d = -1.149450 - 0.073691I$	$0.42738 - 1.60074I$	$0.77404 + 2.18898I$
$u = -1.181300 + 0.680585I$ $a = -1.58235 - 0.21766I$ $b = 1.49849 - 1.03336I$ $c = 0.507502 + 0.382227I$ $d = -0.257265 + 0.946913I$	$1.22414 - 12.55690I$	0
$u = -1.181300 - 0.680585I$ $a = -1.58235 + 0.21766I$ $b = 1.49849 + 1.03336I$ $c = 0.507502 - 0.382227I$ $d = -0.257265 - 0.946913I$	$1.22414 + 12.55690I$	0
$u = -0.010891 + 0.626888I$ $a = 0.061320 - 0.678183I$ $b = 0.075286 + 0.237093I$ $c = 2.55566 - 0.55082I$ $d = 0.626081 - 0.080591I$	$0.65592 - 2.35939I$	$1.51759 + 4.85897I$
$u = -0.010891 - 0.626888I$ $a = 0.061320 + 0.678183I$ $b = 0.075286 - 0.237093I$ $c = 2.55566 + 0.55082I$ $d = 0.626081 + 0.080591I$	$0.65592 + 2.35939I$	$1.51759 - 4.85897I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.617428 + 0.085193I$ $a = -0.811434 + 0.311389I$ $b = 1.63829 - 0.79430I$ $c = 0.704538 - 0.093715I$ $d = -0.394694 - 0.185518I$	$-0.93328 + 2.67780I$	$3.99337 - 7.95500I$
$u = 0.617428 - 0.085193I$ $a = -0.811434 - 0.311389I$ $b = 1.63829 + 0.79430I$ $c = 0.704538 + 0.093715I$ $d = -0.394694 + 0.185518I$	$-0.93328 - 2.67780I$	$3.99337 + 7.95500I$
$u = -0.591164$ $a = 0.615382$ $b = -0.924859$ $c = 0.583091$ $d = -0.714998$	1.02886	10.5160
$u = 0.282782 + 0.492299I$ $a = 1.18279 - 0.79051I$ $b = 0.068443 - 0.284824I$ $c = 1.051110 - 0.331574I$ $d = 0.134725 - 0.272953I$	$-1.67984 - 0.60130I$	$-3.90300 + 0.33160I$
$u = 0.282782 - 0.492299I$ $a = 1.18279 + 0.79051I$ $b = 0.068443 + 0.284824I$ $c = 1.051110 + 0.331574I$ $d = 0.134725 + 0.272953I$	$-1.67984 + 0.60130I$	$-3.90300 - 0.33160I$
$u = 1.33133 + 0.61244I$ $a = -2.12188 - 0.10102I$ $b = 1.78141 + 0.79853I$ $c = -1.50521 + 0.91788I$ $d = 1.48428 + 0.29531I$	$10.54930 + 5.35435I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.33133 - 0.61244I$ $a = -2.12188 + 0.10102I$ $b = 1.78141 - 0.79853I$ $c = -1.50521 - 0.91788I$ $d = 1.48428 - 0.29531I$	$10.54930 - 5.35435I$	0
$u = -1.29995 + 0.68416I$ $a = 2.14975 - 0.35038I$ $b = -1.78132 + 1.02145I$ $c = -1.42200 - 1.00239I$ $d = 1.46979 - 0.33117I$	$9.4739 - 11.4004I$	0
$u = -1.29995 - 0.68416I$ $a = 2.14975 + 0.35038I$ $b = -1.78132 - 1.02145I$ $c = -1.42200 + 1.00239I$ $d = 1.46979 + 0.33117I$	$9.4739 + 11.4004I$	0
$u = -1.27239 + 0.75883I$ $a = -2.02990 - 0.46254I$ $b = 1.99508 - 0.81285I$ $c = -1.32486 - 1.06843I$ $d = 1.45735 - 0.36883I$	$7.95427 - 11.37060I$	0
$u = -1.27239 - 0.75883I$ $a = -2.02990 + 0.46254I$ $b = 1.99508 + 0.81285I$ $c = -1.32486 + 1.06843I$ $d = 1.45735 + 0.36883I$	$7.95427 + 11.37060I$	0
$u = 1.24401 + 0.80606I$ $a = 2.17907 - 0.26765I$ $b = -2.13805 - 1.02984I$ $c = -1.26249 + 1.11762I$ $d = 1.44408 + 0.39312I$	$6.6365 + 17.3722I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.24401 - 0.80606I$ $a = 2.17907 + 0.26765I$ $b = -2.13805 + 1.02984I$ $c = -1.26249 - 1.11762I$ $d = 1.44408 - 0.39312I$	$6.6365 - 17.3722I$	0
$u = 1.51788 + 0.06429I$ $a = -0.63883 - 1.65996I$ $b = 0.502635 + 0.680323I$ $c = -1.74732 + 0.09337I$ $d = 1.57068 + 0.03050I$	$13.78050 + 0.08878I$	0
$u = 1.51788 - 0.06429I$ $a = -0.63883 + 1.65996I$ $b = 0.502635 - 0.680323I$ $c = -1.74732 - 0.09337I$ $d = 1.57068 - 0.03050I$	$13.78050 - 0.08878I$	0
$u = -1.51414 + 0.16464I$ $a = 0.25635 - 1.72702I$ $b = -0.145703 + 0.706687I$ $c = -1.72459 - 0.23680I$ $d = 1.56912 - 0.07814I$	$13.6007 - 6.3599I$	0
$u = -1.51414 - 0.16464I$ $a = 0.25635 + 1.72702I$ $b = -0.145703 - 0.706687I$ $c = -1.72459 + 0.23680I$ $d = 1.56912 + 0.07814I$	$13.6007 + 6.3599I$	0

II. $I_2^u = \langle 984a^2u^8 + 450au^8 + \cdots + 2162a - 142,\ 10a^2u^8 - 2340au^8 + \cdots + 2307a + 6,\ 379a^2u^8 + 2864au^8 + \cdots + 2660a - 2336,\ u^8a + u^8 + \cdots - a - 1,\ u^9 - u^8 + \cdots - u + 1\rangle$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} a \\ -0.206991a^2u^8 - 1.56417au^8 + \cdots - 1.45276a + 1.27581 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.00546150a^2u^8 + 1.27799au^8 + \cdots - 1.25997a - 0.00327690 \\ -0.537411a^2u^8 - 0.245767au^8 + \cdots - 1.18078a + 0.0775532 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.00546150a^2u^8 + 1.27799au^8 + \cdots - 1.25997a - 0.00327690 \\ -0.436920a^2u^8 + 0.239214au^8 + \cdots - 0.797378a - 0.262152 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.208629a^2u^8 + 1.18078au^8 + \cdots + 1.73075a - 1.07482 \\ -0.415620a^2u^8 - 2.74495au^8 + \cdots - 2.18351a + 2.35063 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.206991a^2u^8 + 1.56417au^8 + \cdots + 0.452758a - 1.27581 \\ -0.415620a^2u^8 - 2.74495au^8 + \cdots - 2.18351a + 2.35063 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.00546150a^2u^8 + 1.27799au^8 + \cdots - 1.25997a - 0.00327690 \\ 0.637903a^2u^8 + 0.730748au^8 + \cdots + 1.56417a - 0.417258 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.542873a^2u^8 + 1.03222au^8 + \cdots - 2.44074a + 0.0742764 \\ 0.926270a^2u^8 + 1.25287au^8 + \cdots + 2.49044a - 1.04424 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.171491a^2u^8 + 0.128891au^8 + \cdots - 0.762971a + 0.297105 \\ -0.926270a^2u^8 - 1.25287au^8 + \cdots - 2.49044a + 1.04424 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^7 + 8u^5 - 4u^4 - 8u^3 + 4u^2 - 4u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{27}+18u^{26}+\cdots+5u+1$
c_2, c_4, c_6 c_7, c_9	$u^{27}-9u^{25}+\cdots-u+1$
c_3, c_8	$(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)^3$
c_5, c_{11}	$(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)^3$
c_{10}, c_{12}	$(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{27} - 18y^{26} + \cdots - 15y - 1$
c_2, c_4, c_6 c_7, c_9	$y^{27} - 18y^{26} + \cdots + 5y - 1$
c_3, c_8	$(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)^3$
c_5, c_{11}	$(y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1)^3$
c_{10}, c_{12}	$(y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.772920 + 0.510351I$ $a = -0.875705 - 0.477936I$ $b = 0.681130 + 0.860855I$ $c = 0.675016 - 0.354446I$ $d = -0.161261 - 0.609769I$	$-1.78344 + 2.09337I$	$-0.51499 - 4.16283I$
$u = 0.772920 + 0.510351I$ $a = 0.410374 + 0.842624I$ $b = -0.01297 - 2.10540I$ $c = 0.473784 + 0.085898I$ $d = -1.043500 + 0.370490I$	$-1.78344 + 2.09337I$	$-0.51499 - 4.16283I$
$u = 0.772920 + 0.510351I$ $a = 2.01117 + 0.65601I$ $b = -0.412038 - 0.965972I$ $c = -2.06450 + 2.41256I$ $d = 1.204760 + 0.239279I$	$-1.78344 + 2.09337I$	$-0.51499 - 4.16283I$
$u = 0.772920 - 0.510351I$ $a = -0.875705 + 0.477936I$ $b = 0.681130 - 0.860855I$ $c = 0.675016 + 0.354446I$ $d = -0.161261 + 0.609769I$	$-1.78344 - 2.09337I$	$-0.51499 + 4.16283I$
$u = 0.772920 - 0.510351I$ $a = 0.410374 - 0.842624I$ $b = -0.01297 + 2.10540I$ $c = 0.473784 - 0.085898I$ $d = -1.043500 - 0.370490I$	$-1.78344 - 2.09337I$	$-0.51499 + 4.16283I$
$u = 0.772920 - 0.510351I$ $a = 2.01117 - 0.65601I$ $b = -0.412038 + 0.965972I$ $c = -2.06450 - 2.41256I$ $d = 1.204760 - 0.239279I$	$-1.78344 - 2.09337I$	$-0.51499 + 4.16283I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.825933$ $a=\ \ 0.566697+0.073493I$ $b=-0.840182-0.678317I$ $c=\ \ 0.580888-0.143767I$ $d=-0.622141-0.401472I$	1.19845	8.65230
$u=-0.825933$ $a=\ \ 0.566697-0.073493I$ $b=-0.840182+0.678317I$ $c=\ \ 0.580888+0.143767I$ $d=-0.622141+0.401472I$	1.19845	8.65230
$u=-0.825933$ $a=-2.78526$ $b=\ \ 0.910725$ $c=-4.09362$ $d=\ \ 1.24428$	1.19845	8.65230
$u=-1.173910+0.391555I$ $a=-0.542704-0.501634I$ $b=\ \ 0.438594-0.586599I$ $c=\ \ 0.459000-0.147401I$ $d=-0.974973-0.634235I$	$4.37135-1.33617I$	$7.28409+0.70175I$
$u=-1.173910+0.391555I$ $a=\ \ 1.393210+0.120134I$ $b=-1.198840+0.548367I$ $c=\ \ 0.525422+0.301815I$ $d=-0.431041+0.822025I$	$4.37135-1.33617I$	$7.28409+0.70175I$
$u=-1.173910+0.391555I$ $a=-3.19833+1.16461I$ $b=\ \ 1.57493-1.25625I$ $c=-2.02893-0.93842I$ $d=\ \ 1.40601-0.18779I$	$4.37135-1.33617I$	$7.28409+0.70175I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.173910-0.391555I$ $a=-0.542704+0.501634I$ $b=\quad 0.438594+0.586599I$ $c=\quad 0.459000+0.147401I$ $d=-0.974973+0.634235I$	$4.37135+1.33617I$	$7.28409-0.70175I$
$u=-1.173910-0.391555I$ $a=\quad 1.393210-0.120134I$ $b=-1.198840-0.548367I$ $c=\quad 0.525422-0.301815I$ $d=-0.431041-0.822025I$	$4.37135+1.33617I$	$7.28409-0.70175I$
$u=-1.173910-0.391555I$ $a=-3.19833-1.16461I$ $b=\quad 1.57493+1.25625I$ $c=-2.02893+0.93842I$ $d=\quad 1.40601+0.18779I$	$4.37135+1.33617I$	$7.28409-0.70175I$
$u=\quad 0.141484+0.739668I$ $a=-0.127412-0.662482I$ $b=-0.274121+0.513437I$ $c=\quad 1.24382-0.80550I$ $d=\quad 0.433577-0.366819I$	$0.61694-2.45442I$	$2.32792+2.91298I$
$u=\quad 0.141484+0.739668I$ $a=\quad 0.313138-0.492021I$ $b=\quad 0.423223-0.044379I$ $c=\quad 1.58042+2.09413I$ $d=\quad 0.770392+0.304242I$	$0.61694-2.45442I$	$2.32792+2.91298I$
$u=\quad 0.141484+0.739668I$ $a=\quad 0.09724+2.63384I$ $b=\quad 0.06688-4.55687I$ $c=\quad 0.453361+0.012872I$ $d=-1.203970+0.062577I$	$0.61694-2.45442I$	$2.32792+2.91298I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.141484 - 0.739668I$ $a = -0.127412 + 0.662482I$ $b = -0.274121 - 0.513437I$ $c = 1.24382 + 0.80550I$ $d = 0.433577 + 0.366819I$	$0.61694 + 2.45442I$	$2.32792 - 2.91298I$
$u = 0.141484 - 0.739668I$ $a = 0.313138 + 0.492021I$ $b = 0.423223 + 0.044379I$ $c = 1.58042 - 2.09413I$ $d = 0.770392 - 0.304242I$	$0.61694 + 2.45442I$	$2.32792 - 2.91298I$
$u = 0.141484 - 0.739668I$ $a = 0.09724 - 2.63384I$ $b = 0.06688 + 4.55687I$ $c = 0.453361 - 0.012872I$ $d = -1.203970 - 0.062577I$	$0.61694 + 2.45442I$	$2.32792 - 2.91298I$
$u = 1.172470 + 0.500383I$ $a = 0.912481 - 0.404680I$ $b = -0.807640 - 0.750845I$ $c = 0.447551 + 0.136556I$ $d = -1.044080 + 0.623685I$	$3.59813 + 7.08493I$	$5.57680 - 5.91335I$
$u = 1.172470 + 0.500383I$ $a = -1.56344 - 0.08945I$ $b = 1.31021 + 0.73026I$ $c = 0.523388 - 0.332558I$ $d = -0.361113 - 0.864843I$	$3.59813 + 7.08493I$	$5.57680 - 5.91335I$
$u = 1.172470 + 0.500383I$ $a = 2.99591 + 1.49490I$ $b = -1.40454 - 1.59601I$ $c = -1.82241 + 1.08463I$ $d = 1.40520 + 0.24116I$	$3.59813 + 7.08493I$	$5.57680 - 5.91335I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.172470 - 0.500383I$ $a = 0.912481 + 0.404680I$ $b = -0.807640 + 0.750845I$ $c = 0.447551 - 0.136556I$ $d = -1.044080 - 0.623685I$	$3.59813 - 7.08493I$	$5.57680 + 5.91335I$
$u = 1.172470 - 0.500383I$ $a = -1.56344 + 0.08945I$ $b = 1.31021 - 0.73026I$ $c = 0.523388 + 0.332558I$ $d = -0.361113 + 0.864843I$	$3.59813 - 7.08493I$	$5.57680 + 5.91335I$
$u = 1.172470 - 0.500383I$ $a = 2.99591 - 1.49490I$ $b = -1.40454 + 1.59601I$ $c = -1.82241 - 1.08463I$ $d = 1.40520 - 0.24116I$	$3.59813 - 7.08493I$	$5.57680 + 5.91335I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4v + 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

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

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4v - 1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v = -0.500000 + 0.866025I$ $a = 0$ $b = 0.500000 + 0.866025I$ $c = 1.00000$ $d = 0$	$-1.64493 - 2.02988I$	$-3.00000 + 3.46410I$
$v = -0.500000 - 0.866025I$ $a = 0$ $b = 0.500000 - 0.866025I$ $c = 1.00000$ $d = 0$	$-1.64493 + 2.02988I$	$-3.00000 - 3.46410I$

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

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

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

VI. $\boldsymbol{I_4^v = \langle c,\ d+1,\ a^2v^2 - 2cav - v^2a + c^2 + cv + v^2,\ bv+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -b^2 - v^2 + 4a$

(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
$v = \cdots$		
$a = \cdots$		
$b = \cdots$	$2.02988I$	$4.09661 + 3.75064I$
$c = \cdots$		
$d = \cdots$		

VII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^2(u-1)^3(u^{27}+18u^{26}+\cdots+5u+1)$ $\cdot(u^{71}+30u^{70}+\cdots+4640u+256)$
c_2	$u^2(u-1)^3(u^{27}-9u^{25}+\cdots-u+1)(u^{71}-8u^{70}+\cdots+56u-16)$
c_3, c_8	$u^5(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)^3$ $\cdot(u^{71}-2u^{70}+\cdots+1536u^2-512)$
c_4	$u^2(u+1)^3(u^{27}-9u^{25}+\cdots-u+1)(u^{71}-8u^{70}+\cdots+56u-16)$
c_5, c_{11}	$u(u^2-u+1)(u^2+u+1)(u^9+u^8+\cdots+u-1)^3$ $\cdot(u^{71}+2u^{70}+\cdots-5u^2-4)$
c_6, c_7	$u^2(u+1)^3(u^{27}-9u^{25}+\cdots-u+1)(u^{71}+8u^{70}+\cdots+56u-16)$
c_9	$u^2(u-1)^3(u^{27}-9u^{25}+\cdots-u+1)(u^{71}+8u^{70}+\cdots+56u-16)$
c_{10}	$u(u^2-u+1)^2$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^3$ $\cdot(u^{71}+24u^{70}+\cdots-40u-16)$
c_{12}	$u(u^2+u+1)^2$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^3$ $\cdot(u^{71}+24u^{70}+\cdots-40u-16)$

VIII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^2(y-1)^3(y^{27}-18y^{26}+\cdots-15y-1)$ $\cdot(y^{71}+30y^{70}+\cdots+5022208y-65536)$
c_2, c_4	$y^2(y-1)^3(y^{27}-18y^{26}+\cdots+5y-1)$ $\cdot(y^{71}-30y^{70}+\cdots+4640y-256)$
c_3, c_8	$y^5(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)^3$ $\cdot(y^{71}-30y^{70}+\cdots+1572864y-262144)$
c_5, c_{11}	$y(y^2+y+1)^2$ $\cdot(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)^3$ $\cdot(y^{71}+24y^{70}+\cdots-40y-16)$
c_6, c_7, c_9	$y^2(y-1)^3(y^{27}-18y^{26}+\cdots+5y-1)$ $\cdot(y^{71}-70y^{70}+\cdots-1504y-256)$
c_{10}, c_{12}	$y(y^2+y+1)^2$ $\cdot(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)^3$ $\cdot(y^{71}+48y^{70}+\cdots-6880y-256)$