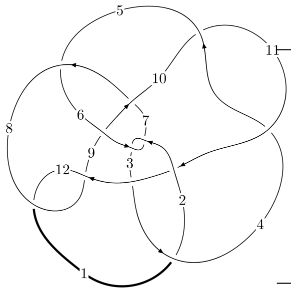
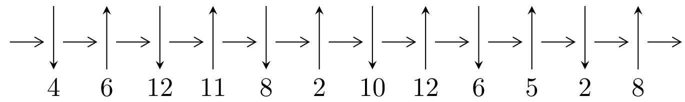
$12n_{0868}$ ($K12n_{0868}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 63u^7 + 216u^6 + 255u^5 - 250u^4 - 354u^3 + 222u^2 + 419b + 903u - 430, \\
& -389u^7 - 1633u^6 - 2213u^5 - 1815u^4 + 11u^3 - 2947u^2 + 10475a + 2525u - 8904, \\
& u^8 + 2u^7 + 2u^6 - 5u^5 + u^4 + 3u^3 + 15u^2 - 14u + 5\rangle \\
I_2^u = \langle & -6u^9 + 22u^8 - 42u^6 + 19u^4 - 56u^3 - 36u^2 + 3b - 26u - 2, \\
& 4u^9 - 18u^8 + 12u^7 + 30u^6 - 26u^5 - 17u^4 + 54u^3 - 5u^2 + 3a - 14u - 15, \\
& u^{10} - 3u^9 - 2u^8 + 6u^7 + 4u^6 - 2u^5 + 7u^4 + 11u^3 + 10u^2 + 4u + 1\rangle \\
I_3^u = \langle & -9660231u^{15} + 63732863u^{14} + \cdots + 108707188b + 103207804, \\
& 97383821u^{15} - 778749368u^{14} + \cdots + 108707188a - 952070632,\ u^{16} - 8u^{15} + \cdots - 16u + 4\rangle \\
I_4^u = \langle & -3u^3 - 15u^2 + 2b - 33u - 26,\ 9u^3 + 35u^2 + 28a + 67u + 34,\ u^4 + 7u^3 + 23u^2 + 38u + 28\rangle \\
I_5^u = \langle & -u^3 - u^2 + 2b - 3u,\ u^3 - 3u^2 + 4a + u - 10,\ u^4 + u^3 + 5u^2 + 2u + 4\rangle \\
I_6^u = \langle & -u^7 + 6u^6 + u^5 + 20u^4 - 3u^3 + 10u^2 + 56b - 2u - 24, \\
& 2u^7 + 2u^6 + 5u^5 + 16u^4 - u^3 + 36u^2 + 14a + 11u + 20,\ u^8 + 5u^6 + 2u^5 + 9u^4 + 8u^3 + 12u^2 + 8u + 4\rangle \\
I_7^u = \langle & u^2 + b - u + 1,\ a,\ u^4 - 2u^3 + 2u^2 - u + 1\rangle \\
I_8^u = \langle & 4u^3 + 9u^2 + 11b + u - 15,\ -18u^3 - 24u^2 + 55a - 10u + 40,\ u^4 - 5u + 5\rangle \\
I_9^u = \langle & b - u,\ a + 1,\ u^2 + 1\rangle
\end{aligned}$$

* 9 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 60 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`).

I. $\boldsymbol{I_1^u = \langle 63u^7 + 216u^6 + \cdots + 419b - 430,\ -389u^7 - 1633u^6 + \cdots + 10475a - 8904,\ u^8 + 2u^7 + \cdots - 14u + 5\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0371360u^7 + 0.155895u^6 + \cdots - 0.241050u + 0.850024 \\ -0.150358u^7 - 0.515513u^6 + \cdots - 2.15513u + 1.02625 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.101289u^7 - 0.175847u^6 + \cdots - 0.558473u + 1.33451 \\ -u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.0456325u^7 + 0.0707399u^6 + \cdots - 2.89260u + 1.80029 \\ -0.183771u^7 - 0.630072u^6 + \cdots - 0.300716u + 0.143198 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.00507876u^7 - 0.102587u^6 + \cdots + 0.934129u + 0.406224 \\ -0.0381862u^7 + 0.0119332u^6 + \cdots + 0.119332u + 0.133652 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.101289u^7 - 0.175847u^6 + \cdots - 1.55847u + 1.33451 \\ -u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.0712936u^7 - 0.0787208u^6 + \cdots - 0.827208u + 0.673527 \\ -0.0381862u^7 + 0.0119332u^6 + \cdots + 0.119332u + 0.133652 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.152916u^7 - 0.215714u^6 + \cdots - 2.19714u + 0.859208 \\ 0.176611u^7 + 0.319809u^6 + \cdots + 1.19809u - 0.618138 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.0236945u^7 + 0.104095u^6 + \cdots - 0.999045u + 0.241069 \\ 0.176611u^7 + 0.319809u^6 + \cdots + 1.19809u - 0.618138 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.218219u^7 - 0.375607u^6 + \cdots - 2.30807u + 1.81497 \\ -0.0816229u^7 - 0.136993u^6 + \cdots - 1.36993u + 0.185680 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= \frac{61428}{52375}u^7 + \frac{145366}{52375}u^6 + \frac{182076}{52375}u^5 - \frac{39694}{10475}u^4 + \frac{38278}{52375}u^3 + \frac{248544}{52375}u^2 + \frac{32336}{2095}u - \frac{602992}{52375}$

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_7 c_{11}	$u^8 - 2u^7 + 2u^6 + 5u^5 + u^4 - 3u^3 + 15u^2 + 14u + 5$
c_2, c_6, c_8 c_{12}	$u^8 - u^7 - 8u^6 + 9u^5 + 23u^4 - 13u^3 + 16u^2 - 4u + 2$
c_3, c_9	$5(5u^8 + 29u^7 + \cdots + 864u + 160)$
c_4, c_{10}	$5(5u^8 + 29u^7 + 88u^6 + 173u^5 + 235u^4 + 223u^3 + 142u^2 + 52u + 8)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_7 c_{11}	$y^8 + 26y^6 - 3y^5 + 157y^4 - 99y^3 + 319y^2 - 46y + 25$
c_2, c_6, c_8 c_{12}	$y^8 - 17y^7 + 128y^6 - 443y^5 + 503y^4 + 607y^3 + 244y^2 + 48y + 4$
c_3, c_9	$25(25y^8 + 789y^7 + \cdots - 150016y + 25600)$
c_4, c_{10}	25 $\cdot (25y^8 + 39y^7 + 60y^6 - 83y^5 + 123y^4 + 427y^3 + 732y^2 - 432y + 64)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.025930 + 0.701004I$ $a = -0.761354 + 0.203728I$ $b = 0.93351 + 1.44138I$	$-4.59702 - 4.89276I$	$-8.69831 + 5.22490I$
$u = 1.025930 - 0.701004I$ $a = -0.761354 - 0.203728I$ $b = 0.93351 - 1.44138I$	$-4.59702 + 4.89276I$	$-8.69831 - 5.22490I$
$u = 0.422794 + 0.334865I$ $a = 0.741901 - 0.000101I$ $b = 0.013606 - 0.711717I$	$-0.740582 - 1.158680I$	$-4.63203 + 6.37231I$
$u = 0.422794 - 0.334865I$ $a = 0.741901 + 0.000101I$ $b = 0.013606 + 0.711717I$	$-0.740582 + 1.158680I$	$-4.63203 - 6.37231I$
$u = -0.96585 + 1.28563I$ $a = 1.086050 - 0.661498I$ $b = 0.30067 + 1.70085I$	$13.8260 + 7.0293I$	$1.39449 - 3.33100I$
$u = -0.96585 - 1.28563I$ $a = 1.086050 + 0.661498I$ $b = 0.30067 - 1.70085I$	$13.8260 - 7.0293I$	$1.39449 + 3.33100I$
$u = -1.48287 + 1.45144I$ $a = -0.746600 + 0.618962I$ $b = -0.24778 - 2.35508I$	$11.2508 + 13.9556I$	$-0.73615 - 5.79535I$
$u = -1.48287 - 1.45144I$ $a = -0.746600 - 0.618962I$ $b = -0.24778 + 2.35508I$	$11.2508 - 13.9556I$	$-0.73615 + 5.79535I$

II.

$$I_2^u = \langle -6u^9+22u^8+\cdots+3b-2,\ 4u^9-18u^8+\cdots+3a-15,\ u^{10}-3u^9+\cdots+4u+1 \rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{4}{3}u^9 + 6u^8 + \cdots + \frac{14}{3}u + 5 \\ 2u^9 - \frac{22}{3}u^8 + \cdots + \frac{26}{3}u + \frac{2}{3} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^9 - 3u^8 - 2u^7 + 6u^6 + 4u^5 - 2u^4 + 7u^3 + 11u^2 + 10u + 4 \\ -3u^9 + \frac{26}{3}u^8 + \cdots - \frac{70}{3}u - \frac{25}{3} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{8}{3}u^9 + \frac{26}{3}u^8 + \cdots - 11u - \frac{7}{3} \\ -\frac{10}{3}u^9 + 12u^8 + \cdots - \frac{61}{3}u^2 - \frac{37}{3}u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^9 + 3u^8 + 2u^7 - 6u^6 - 4u^5 + 2u^4 - 7u^3 - 11u^2 - 10u - 4 \\ 3u^9 - \frac{26}{3}u^8 + \cdots + \frac{73}{3}u + \frac{25}{3} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -2u^9 + \frac{17}{3}u^8 + \cdots - \frac{40}{3}u - \frac{13}{3} \\ -3u^9 + \frac{26}{3}u^8 + \cdots - \frac{70}{3}u - \frac{25}{3} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{20}{3}u^9 - 22u^8 + \cdots + \frac{104}{3}u + 7 \\ \frac{14}{3}u^9 - \frac{49}{3}u^8 + \cdots + \frac{67}{3}u + \frac{8}{3} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 6u^9 - \frac{62}{3}u^8 + \cdots + \frac{82}{3}u + \frac{7}{3} \\ -\frac{4}{3}u^9 + \frac{16}{3}u^8 + \cdots - 2u + \frac{4}{3} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{14}{3}u^9 - \frac{46}{3}u^8 + \cdots + \frac{76}{3}u + \frac{11}{3} \\ -\frac{4}{3}u^9 + \frac{16}{3}u^8 + \cdots - 2u + \frac{4}{3} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -8.66667u^9 + 29.3333u^8 + \cdots - 38.3333u - 4.66667 \\ -2u^9 + \frac{20}{3}u^8 + \cdots - \frac{31}{3}u - \frac{4}{3} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$$= -32u^9 + \frac{304}{3}u^8 + 52u^7 - 220u^6 - 92u^5 + \frac{364}{3}u^4 - \frac{728}{3}u^3 - 324u^2 - \frac{620}{3}u - \frac{146}{3}$$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.090900+0.471848I$ $a=\ \ 0.075129-0.502047I$ $b=-0.272955+0.216622I$	$-2.04480+6.94756I$	$1.39778-11.85170I$
$u=-1.090900-0.471848I$ $a=\ \ 0.075129+0.502047I$ $b=-0.272955-0.216622I$	$-2.04480-6.94756I$	$1.39778+11.85170I$
$u=\ \ 0.696642+0.968690I$ $a=\ \ 2.05550+0.04412I$ $b=\ \ 0.27367-2.40783I$	$-2.04480-6.94756I$	$1.39778+11.85170I$
$u=\ \ 0.696642-0.968690I$ $a=\ \ 2.05550-0.04412I$ $b=\ \ 0.27367+2.40783I$	$-2.04480+6.94756I$	$1.39778-11.85170I$
$u=-0.258396+0.483619I$ $a=-0.19552+2.23757I$ $b=\ \ 0.126970+0.325073I$	2.14309	$10.96619+0.I$
$u=-0.258396-0.483619I$ $a=-0.19552-2.23757I$ $b=\ \ 0.126970-0.325073I$	2.14309	$10.96619+0.I$
$u=-0.336196+0.392322I$ $a=\ \ 0.970972-0.269736I$ $b=-0.03146+1.71919I$	$-9.71882+0.63219I$	$-5.88087-11.75603I$
$u=-0.336196-0.392322I$ $a=\ \ 0.970972+0.269736I$ $b=-0.03146-1.71919I$	$-9.71882-0.63219I$	$-5.88087+11.75603I$
$u=\ \ 2.48885+0.02726I$ $a=\ \ 0.093920+0.941860I$ $b=-0.59622-4.37220I$	$-9.71882+0.63219I$	$-5.88087-11.75603I$
$u=\ \ 2.48885-0.02726I$ $a=\ \ 0.093920-0.941860I$ $b=-0.59622+4.37220I$	$-9.71882-0.63219I$	$-5.88087+11.75603I$

III.

$\boldsymbol{I^u_3 = \langle -9.66\times10^{6}u^{15} + 6.37\times10^{7}u^{14} + \cdots + 1.09\times10^{8}b + 1.03\times10^{8},\ 9.74\times10^{7}u^{15} - 7.79\times10^{8}u^{14} + \cdots + 1.09\times10^{8}a - 9.52\times10^{8},\ u^{16} - 8u^{15} + \cdots - 16u + 4\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-0.895836u^{15} + 7.16373u^{14} + \cdots - 21.1943u + 8.75812\\0.0888647u^{15} - 0.586280u^{14} + \cdots + 0.782914u - 0.949411\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.241595u^{15} + 2.01426u^{14} + \cdots - 6.73203u + 5.14019\\0.268938u^{15} - 1.87916u^{14} + \cdots + 2.75348u - 1.37285\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.380234u^{15} + 3.62129u^{14} + \cdots - 17.0765u + 9.18951\\0.105931u^{15} - 0.780917u^{14} + \cdots + 4.46533u - 2.37128\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-0.222657u^{15} + 2.13510u^{14} + \cdots - 10.9785u + 7.76734\\0.276444u^{15} - 1.95859u^{14} + \cdots + 3.06772u - 1.24414\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0.0273430u^{15} + 0.135102u^{14} + \cdots - 3.97855u + 3.76734\\0.268938u^{15} - 1.87916u^{14} + \cdots + 2.75348u - 1.37285\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-0.160445u^{15} + 1.90668u^{14} + \cdots - 11.6922u + 6.66721\\-0.214232u^{15} + 1.73017u^{14} + \cdots - 1.78134u + 0.144015\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-0.551916u^{15} + 4.80715u^{14} + \cdots - 14.5702u + 7.46698\\0.486247u^{15} - 4.00893u^{14} + \cdots + 11.7313u - 5.24454\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-0.0656690u^{15} + 0.798218u^{14} + \cdots - 2.83890u + 2.22243\\0.486247u^{15} - 4.00893u^{14} + \cdots + 11.7313u - 5.24454\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.967203u^{15} + 8.34540u^{14} + \cdots - 29.2669u + 13.9380\\0.00295473u^{15} - 0.352401u^{14} + \cdots + 5.57526u - 3.58334\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{18550634}{27176797}u^{15} + \frac{155969047}{27176797}u^{14} + \cdots - \frac{461152304}{27176797}u + \frac{177121936}{27176797}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_7 c_{11}	$u^{16} - 8u^{15} + \cdots - 16u + 4$
c_2, c_8	$(u^8 + u^6 - 2u^5 - 2u^4 + 3u^2 + 2u + 1)^2$
c_3, c_9	$(u^8 - 4u^6 + 2u^5 + 7u^4 - 6u^3 - 4u^2 + 6u - 1)^2$
c_4, c_{10}	$(u^8 + 2u^6 + 3u^4 - 2u^2 - 3)^2$
c_6, c_{12}	$(u^8 + u^6 + 2u^5 - 2u^4 + 3u^2 - 2u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_7 c_{11}	$y^{16} - 16y^{15} + \cdots - 32y + 16$
c_2, c_6, c_8 c_{12}	$(y^8 + 2y^7 - 3y^6 - 2y^5 + 12y^4 - 2y^3 + 5y^2 + 2y + 1)^2$
c_3, c_9	$(y^8 - 8y^7 + 30y^6 - 68y^5 + 103y^4 - 108y^3 + 74y^2 - 28y + 1)^2$
c_4, c_{10}	$(y^4 + 2y^3 + 3y^2 - 2y - 3)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.200065 + 0.849267I$ $a = -0.759797 + 0.858070I$ $b = -0.115947 + 0.816941I$	1.05416	$-61.330430 + 0.10I$
$u = -0.200065 - 0.849267I$ $a = -0.759797 - 0.858070I$ $b = -0.115947 - 0.816941I$	1.05416	$-61.330430 + 0.10I$
$u = 0.597550 + 0.533296I$ $a = -2.32458 - 0.98205I$ $b = -0.18223 + 2.10815I$	$-2.27209 - 5.91675I$	$-0.74241 + 2.97163I$
$u = 0.597550 - 0.533296I$ $a = -2.32458 + 0.98205I$ $b = -0.18223 - 2.10815I$	$-2.27209 + 5.91675I$	$-0.74241 - 2.97163I$
$u = 1.293270 + 0.159272I$ $a = -0.119407 + 0.360444I$ $b = -0.835722 - 0.165494I$	$-2.27209 - 5.91675I$	$-0.74241 + 2.97163I$
$u = 1.293270 - 0.159272I$ $a = -0.119407 - 0.360444I$ $b = -0.835722 + 0.165494I$	$-2.27209 + 5.91675I$	$-0.74241 - 2.97163I$
$u = -0.446252 + 0.506902I$ $a = -0.466779 + 0.410930I$ $b = - 1.70507I$	-9.66946	$-3.84561 + 0.I$
$u = -0.446252 - 0.506902I$ $a = -0.466779 - 0.410930I$ $b = 1.70507I$	-9.66946	$-3.84561 + 0.I$
$u = 0.599542 + 0.283398I$ $a = 0.25980 - 1.48541I$ $b = 0.115947 + 0.816941I$	1.05416	$-61.330430 + 0.10I$
$u = 0.599542 - 0.283398I$ $a = 0.25980 + 1.48541I$ $b = 0.115947 - 0.816941I$	1.05416	$-61.330430 + 0.10I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.197290 + 0.687330I$ $a = 0.028176 - 0.357279I$ $b = 0.835722 - 0.165494I$	$-2.27209 + 5.91675I$	$-0.74241 - 2.97163I$
$u = -1.197290 - 0.687330I$ $a = 0.028176 + 0.357279I$ $b = 0.835722 + 0.165494I$	$-2.27209 - 5.91675I$	$-0.74241 + 2.97163I$
$u = 0.823346 + 1.136370I$ $a = 1.41581 + 0.26433I$ $b = 0.18223 - 2.10815I$	$-2.27209 - 5.91675I$	$-0.74241 + 2.97163I$
$u = 0.823346 - 1.136370I$ $a = 1.41581 - 0.26433I$ $b = 0.18223 + 2.10815I$	$-2.27209 + 5.91675I$	$-0.74241 - 2.97163I$
$u = 2.52990 + 0.08941I$ $a = -0.033221 - 0.939974I$ $b = 4.50608I$	-9.66946	$-3.84561 + 0.I$
$u = 2.52990 - 0.08941I$ $a = -0.033221 + 0.939974I$ $b = - 4.50608I$	-9.66946	$-3.84561 + 0.I$

IV. $\boldsymbol{I_4^u = \langle -3u^3 - 15u^2 + 2b - 33u - 26,\ 9u^3 + 35u^2 + 28a + 67u + 34,\ u^4 + 7u^3 + 23u^2 + 38u + 28\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.321429u^3 - 1.25000u^2 - 2.39286u - 1.21429 \\ \frac{3}{2}u^3 + \frac{15}{2}u^2 + \frac{33}{2}u + 13 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{9}{28}u^3 + \frac{7}{4}u^2 + \frac{137}{28}u + \frac{33}{7} \\ -\frac{1}{2}u^3 - \frac{5}{2}u^2 - \frac{13}{2}u - 6 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.89286u^3 - 7.75000u^2 - 15.0357u - 8.42857 \\ \frac{7}{2}u^3 + \frac{33}{2}u^2 + \frac{71}{2}u + 26 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -\frac{1}{7}u^3 - \frac{1}{2}u^2 - \frac{11}{14}u + \frac{57}{14} \\ -u^2 - 2u - 9 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{5}{28}u^3 - \frac{3}{4}u^2 - \frac{45}{28}u - \frac{9}{7} \\ -\frac{1}{2}u^3 - \frac{5}{2}u^2 - \frac{13}{2}u - 6 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{1}{7}u^3 - \frac{1}{2}u^2 - \frac{11}{14}u + \frac{1}{14} \\ u^2 + 4u + 5 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} \frac{3}{14}u^3 + 2u^2 + \frac{38}{7}u + \frac{93}{14} \\ -2u^2 - 7u - 11 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{3}{14}u^3 - \frac{11}{7}u - \frac{61}{14} \\ -2u^2 - 7u - 11 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{1}{7}u^3 - \frac{1}{2}u^2 - \frac{11}{14}u + \frac{1}{14} \\ -u^3 - 5u^2 - 11u - 9 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2u^3 - 10u^2 - 22u - 18$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^4 - 7u^3 + 23u^2 - 38u + 28$
c_2, c_6, c_8 c_{12}	$u^4 - u^3 - 12u^2 + 5u + 43$
c_3, c_9	$u^4 - 4u^3 + 23u^2 - 38u + 91$
c_4, c_{10}	$(u^2 + u + 1)^2$
c_5, c_{11}	$u^4 - u^3 + 5u^2 - 2u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^4 - 3y^3 + 53y^2 - 156y + 784$
c_2, c_6, c_8 c_{12}	$y^4 - 25y^3 + 240y^2 - 1057y + 1849$
c_3, c_9	$y^4 + 30y^3 + 407y^2 + 2742y + 8281$
c_4, c_{10}	$(y^2 + y + 1)^2$
c_5, c_{11}	$y^4 + 9y^3 + 29y^2 + 36y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.82417+1.02661I$ $a=\ \ 0.405829-0.721109I$ $b=-0.50000+2.59808I$	$11.51450+2.02988I$	$0.-3.46410I$
$u=-1.82417-1.02661I$ $a=\ \ 0.405829+0.721109I$ $b=-0.50000-2.59808I$	$11.51450-2.02988I$	$0.+3.46410I$
$u=-1.67583+1.89264I$ $a=-0.512972+0.454211I$ $b=-0.50000-2.59808I$	$11.51450-2.02988I$	$0.+3.46410I$
$u=-1.67583-1.89264I$ $a=-0.512972-0.454211I$ $b=-0.50000+2.59808I$	$11.51450+2.02988I$	$0.-3.46410I$

V. $\boldsymbol{I_5^u = \langle -u^3 - u^2 + 2b - 3u,\ u^3 - 3u^2 + 4a + u - 10,\ u^4 + u^3 + 5u^2 + 2u + 4\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{1}{4}u^3 + \frac{3}{4}u^2 - \frac{1}{4}u + \frac{5}{2} \\ \frac{1}{2}u^3 + \frac{1}{2}u^2 + \frac{3}{2}u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} \frac{1}{2}u^3 + 2u - \frac{5}{2} \\ -\frac{1}{2}u^3 - \frac{1}{2}u^2 - \frac{5}{2}u + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -3u^3 + \frac{3}{2}u^2 - \frac{15}{2}u + \frac{17}{2} \\ \frac{7}{2}u^3 + \frac{1}{2}u^2 + \frac{19}{2}u - 3 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} \frac{5}{4}u^3 + \frac{11}{4}u^2 + \frac{31}{4}u + 11 \\ -u^2 - 2u - 9 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{1}{2}u^2 - \frac{1}{2}u - \frac{3}{2} \\ -\frac{1}{2}u^3 - \frac{1}{2}u^2 - \frac{5}{2}u + 1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{1}{4}u^3 - \frac{1}{4}u^2 + \frac{3}{4}u - 1 \\ -u^3 - 2u^2 - 3u - 3 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{3}{4}u^3 + \frac{9}{4}u^2 + \frac{13}{4}u + 5 \\ -2u^2 - u - 5 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{3}{4}u^3 + \frac{1}{4}u^2 + \frac{9}{4}u \\ -2u^2 - u - 5 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{1}{4}u^3 - \frac{1}{4}u^2 + \frac{3}{4}u - 1 \\ -u^3 - u^2 - 3u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2u^3 + 2u^2 + 6u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^4 - u^3 + 5u^2 - 2u + 4$
c_2, c_6, c_8 c_{12}	$u^4 - u^3 - 12u^2 + 5u + 43$
c_3, c_9	$u^4 - 4u^3 + 23u^2 - 38u + 91$
c_4, c_{10}	$(u^2 + u + 1)^2$
c_5, c_{11}	$u^4 - 7u^3 + 23u^2 - 38u + 28$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^4 + 9y^3 + 29y^2 + 36y + 16$
c_2, c_6, c_8 c_{12}	$y^4 - 25y^3 + 240y^2 - 1057y + 1849$
c_3, c_9	$y^4 + 30y^3 + 407y^2 + 2742y + 8281$
c_4, c_{10}	$(y^2 + y + 1)^2$
c_5, c_{11}	$y^4 - 3y^3 + 53y^2 - 156y + 784$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.175835+1.026610I$ $a=1.63907-0.28074I$ $b=-0.500000+0.866025I$	$11.51450-2.02988I$	$0.+3.46410I$
$u=-0.175835-1.026610I$ $a=1.63907+0.28074I$ $b=-0.500000-0.866025I$	$11.51450+2.02988I$	$0.-3.46410I$
$u=-0.32417+1.89264I$ $a=-0.889071+0.152277I$ $b=-0.500000-0.866025I$	$11.51450+2.02988I$	$0.-3.46410I$
$u=-0.32417-1.89264I$ $a=-0.889071-0.152277I$ $b=-0.500000+0.866025I$	$11.51450-2.02988I$	$0.+3.46410I$

VI. $\boldsymbol{I^u_6 = \langle -u^7 + 6u^6 + \cdots + 56b - 24,\ 2u^7 + 2u^6 + \cdots + 14a + 20,\ u^8 + 5u^6 + 2u^5 + 9u^4 + 8u^3 + 12u^2 + 8u + 4\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{1}{7}u^7 - \frac{1}{7}u^6 + \cdots - \frac{11}{14}u - \frac{10}{7} \\ \frac{1}{56}u^7 - \frac{3}{28}u^6 + \cdots + \frac{1}{28}u + \frac{3}{7} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -\frac{3}{56}u^7 - \frac{3}{56}u^6 + \cdots - \frac{6}{7}u - \frac{29}{28} \\ 0.0535714u^7 - 0.0714286u^6 + \cdots + 1.60714u + 0.785714 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.178571u^7 - 0.0535714u^6 + \cdots - 1.60714u - 2.53571 \\ \frac{3}{56}u^7 - \frac{4}{7}u^6 + \cdots + \frac{17}{28}u - \frac{3}{14} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} \frac{1}{7}u^7 + \frac{1}{56}u^6 + \cdots + \frac{15}{28}u + \frac{5}{28} \\ u^2 + 2u + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{8}u^6 + \frac{1}{4}u^5 + \cdots + \frac{3}{4}u - \frac{1}{4} \\ 0.0535714u^7 - 0.0714286u^6 + \cdots + 1.60714u + 0.785714 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{1}{4}u^7 + \frac{1}{8}u^6 + \cdots + \frac{9}{4}u + \frac{9}{4} \\ \frac{3}{28}u^7 + \frac{3}{28}u^6 + \cdots + \frac{12}{7}u + \frac{15}{14} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.392857u^7 - 0.232143u^6 + \cdots + 2.53571u + 1.67857 \\ \frac{3}{14}u^7 + \frac{3}{14}u^6 + \cdots + \frac{10}{7}u + \frac{8}{7} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.607143u^7 - 0.0178571u^6 + \cdots + 3.96429u + 2.82143 \\ \frac{3}{14}u^7 + \frac{3}{14}u^6 + \cdots + \frac{10}{7}u + \frac{8}{7} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{1}{4}u^7 - \frac{1}{8}u^6 + \cdots - \frac{9}{4}u - \frac{9}{4} \\ \frac{1}{7}u^7 - \frac{5}{14}u^6 + \cdots + \frac{2}{7}u - \frac{4}{7} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1}{2}u^7 + u^6 - \frac{7}{2}u^5 + 4u^4 - \frac{11}{2}u^3 + 3u^2 - u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_7 c_{11}	$u^8 + 5u^6 - 2u^5 + 9u^4 - 8u^3 + 12u^2 - 8u + 4$
c_2, c_6, c_8 c_{12}	$u^8 - 2u^7 + u^6 - 6u^5 + 28u^4 - 22u^3 - 3u^2 + 6u + 13$
c_3, c_9	$(u^4 + 4u^3 + 5u^2 + 2u + 1)^2$
c_4, c_{10}	$(u^2 - u + 1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_7 c_{11}	$y^8 + 10y^7 + 43y^6 + 110y^5 + 177y^4 + 160y^3 + 88y^2 + 32y + 16$
c_2, c_6, c_8 c_{12}	$y^8 - 2y^7 + 33y^6 - 74y^5 + 564y^4 - 554y^3 + 1001y^2 - 114y + 169$
c_3, c_9	$(y^4 - 6y^3 + 11y^2 + 6y + 1)^2$
c_4, c_{10}	$(y^2 + y + 1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.329313 + 0.970922I$ $a = 0.923688 - 0.313292I$ $b = 0.500000 - 0.133975I$	$1.64493 - 2.02988I$	$0. + 3.46410I$
$u = -0.329313 - 0.970922I$ $a = 0.923688 + 0.313292I$ $b = 0.500000 + 0.133975I$	$1.64493 + 2.02988I$	$0. - 3.46410I$
$u = -0.536713 + 0.470922I$ $a = -0.923688 + 1.052730I$ $b = 0.500000 + 0.133975I$	$1.64493 + 2.02988I$	$0. - 3.46410I$
$u = -0.536713 - 0.470922I$ $a = -0.923688 - 1.052730I$ $b = 0.500000 - 0.133975I$	$1.64493 - 2.02988I$	$0. + 3.46410I$
$u = 0.80559 + 1.29267I$ $a = -0.557193 - 0.347240I$ $b = 0.50000 + 1.86603I$	$1.64493 - 2.02988I$	$0. + 3.46410I$
$u = 0.80559 - 1.29267I$ $a = -0.557193 + 0.347240I$ $b = 0.50000 - 1.86603I$	$1.64493 + 2.02988I$	$0. - 3.46410I$
$u = 0.06044 + 1.79267I$ $a = 0.557193 + 0.018785I$ $b = 0.50000 - 1.86603I$	$1.64493 + 2.02988I$	$0. - 3.46410I$
$u = 0.06044 - 1.79267I$ $a = 0.557193 - 0.018785I$ $b = 0.50000 + 1.86603I$	$1.64493 - 2.02988I$	$0. + 3.46410I$

VII. $I_7^u = \langle u^2 + b - u + 1,\ a,\ u^4 - 2u^3 + 2u^2 - u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0 \\ -u^2 + u - 1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -u^2 + u - 1 \\ u^3 - 2u^2 + 2u - 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ -u^2 + u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u^3 - 2u^2 + u \\ u^3 - u^2 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^3 - 2u^2 + u \\ u^2 - u + 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^3 - u^2 + 1 \\ u^2 - u + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^3 - 2u^2 + u \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= u^2 - u - 1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.070696 + 0.758745I$ $a = 0$ $b = -0.500000 + 0.866025I$	$-1.64493 + 2.02988I$	$-1.50000 - 0.86603I$
$u = -0.070696 - 0.758745I$ $a = 0$ $b = -0.500000 - 0.866025I$	$-1.64493 - 2.02988I$	$-1.50000 + 0.86603I$
$u = 1.070700 + 0.758745I$ $a = 0$ $b = -0.500000 - 0.866025I$	$-1.64493 - 2.02988I$	$-1.50000 + 0.86603I$
$u = 1.070700 - 0.758745I$ $a = 0$ $b = -0.500000 + 0.866025I$	$-1.64493 + 2.02988I$	$-1.50000 - 0.86603I$

VIII.

$$\boldsymbol{I^u_8 = \langle 4u^3+9u^2+11b+u-15,\ -18u^3-24u^2+55a-10u+40,\ u^4-5u+5\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$

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

$$a_1 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.327273u^3+0.436364u^2+0.181818u-0.727273\\-0.363636u^3-0.818182u^2-0.0909091u+1.36364\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-0.218182u^3-0.290909u^2+0.545455u+0.818182\\-u\end{pmatrix}$$

$$a_9 = \begin{pmatrix}0.472727u^3+0.963636u^2-1.18182u-0.272727\\-0.454545u^3-1.27273u^2+1.63636u+0.454545\end{pmatrix}$$

$$a_3 = \begin{pmatrix}0.218182u^3-0.509091u^2-0.745455u+2.18182\\-0.545455u^3+0.272727u^2+1.36364u-1.45455\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-0.218182u^3-0.290909u^2-0.454545u+0.818182\\-u\end{pmatrix}$$

$$a_5 = \begin{pmatrix}0.127273u^3+0.0363636u^2-0.0181818u-0.727273\\0.454545u^3+0.272727u^2+1.36364u-1.45455\end{pmatrix}$$

$$a_6 = \begin{pmatrix}0.236364u^3+0.581818u^2+0.709091u-1.63636\\0.181818u^3-0.0909091u^2-0.454545u+0.818182\end{pmatrix}$$

$$a_7 = \begin{pmatrix}0.418182u^3+0.490909u^2+0.254545u-0.818182\\0.181818u^3-0.0909091u^2-0.454545u+0.818182\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-0.0545455u^3-0.0727273u^2-0.163636u+0.254545\\-0.436364u^3-0.181818u^2-0.909091u+1.63636\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{2}{11}u^3-\frac{1}{11}u^2-\frac{5}{11}u-\frac{35}{11}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_7 c_{11}	$u^4 - 5u + 5$
c_2, c_8	$(u^2 - 3u + 1)^2$
c_3, c_9	$5(5u^4 + 30u^2 + 95u + 61)$
c_4, c_{10}	$5(5u^4 + 5u^2 + 1)$
c_6, c_{12}	$(u^2 + 3u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_7 c_{11}	$y^4 + 10y^2 - 25y + 25$
c_2, c_6, c_8 c_{12}	$(y^2 - 7y + 1)^2$
c_3, c_9	$25(25y^4 + 300y^3 + 1510y^2 - 5365y + 3721)$
c_4, c_{10}	$25(5y^2 + 5y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_8	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.118030 + 0.363271I$ $a = 0.276393 + 0.850651I$ $b = -1.175570I$	-4.60582	$-3.61803 + 0.I$
$u = 1.118030 - 0.363271I$ $a = 0.276393 - 0.850651I$ $b = 1.175570I$	-4.60582	$-3.61803 + 0.I$
$u = -1.11803 + 1.53884I$ $a = 0.723607 - 0.525731I$ $b = 1.90211I$	11.1856	$-6 - 1.381966 + 0.10I$
$u = -1.11803 - 1.53884I$ $a = 0.723607 + 0.525731I$ $b = -1.90211I$	11.1856	$-6 - 1.381966 + 0.10I$

IX. $I_9^u = \langle b - u,\ a + 1,\ u^2 + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} -1 \\ u \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} -u \\ 2u \end{pmatrix}$$

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

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

$$a_6 = \begin{pmatrix} -u \\ u - 1 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_9^u		$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$1.000000I$		
$a=-1.00000$		1.64493	0
$b=$	$1.000000I$		
$u=$	$-1.000000I$		
$a=-1.00000$		1.64493	0
$b=$	$-1.000000I$		

X. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5, c_7 c_{11}	$(u^2+1)(u^4-5u+5)(u^4-7u^3+\cdots-38u+28)(u^4-u^3+\cdots-2u+4)$ $\cdot(u^4+2u^3+2u^2+u+1)(u^8+5u^6+\cdots-8u+4)$ $\cdot(u^8-2u^7+2u^6+5u^5+u^4-3u^3+15u^2+14u+5)$ $\cdot(u^{10}+3u^9-2u^8-6u^7+4u^6+2u^5+7u^4-11u^3+10u^2-4u+1)$ $\cdot(u^{16}-8u^{15}+\cdots-16u+4)$
c_2, c_8	$((u^2-3u+1)^2)(u^2+u+1)^2(u^2+2u+2)(u^4-u^3+\cdots+5u+43)^2$ $\cdot(u^5+u^4+2u^3+u^2-u-1)^2(u^8+u^6-2u^5-2u^4+3u^2+2u+1)^2$ $\cdot(u^8-2u^7+u^6-6u^5+28u^4-22u^3-3u^2+6u+13)$ $\cdot(u^8-u^7-8u^6+9u^5+23u^4-13u^3+16u^2-4u+2)$
c_3, c_9	$25(u-1)^{10}(u+1)^2(u^4-4u^3+23u^2-38u+91)^2$ $\cdot(u^4+2u^3+2u^2+u+1)(u^4+4u^3+5u^2+2u+1)^2$ $\cdot(5u^4+30u^2+95u+61)(u^8-4u^6+\cdots+6u-1)^2$ $\cdot(5u^8+29u^7+\cdots+864u+160)$
c_4, c_{10}	$25u^2(u^2-u+1)^4(u^2+u+1)^6(5u^4+5u^2+1)$ $\cdot(u^5-3u^4+6u^3-7u^2+5u-3)^2(u^8+2u^6+3u^4-2u^2-3)^2$ $\cdot(5u^8+29u^7+88u^6+173u^5+235u^4+223u^3+142u^2+52u+8)$
c_6, c_{12}	$(u^2-2u+2)(u^2+u+1)^2(u^2+3u+1)^2(u^4-u^3+\cdots+5u+43)^2$ $\cdot(u^5+u^4+2u^3+u^2-u-1)^2(u^8+u^6+2u^5-2u^4+3u^2-2u+1)^2$ $\cdot(u^8-2u^7+u^6-6u^5+28u^4-22u^3-3u^2+6u+13)$ $\cdot(u^8-u^7-8u^6+9u^5+23u^4-13u^3+16u^2-4u+2)$

XI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_7 c_{11}	$(y+1)^2(y^4+2y^2+3y+1)(y^4+10y^2-25y+25)$ $\cdot(y^4-3y^3+53y^2-156y+784)(y^4+9y^3+29y^2+36y+16)$ $\cdot(y^8+26y^6-3y^5+157y^4-99y^3+319y^2-46y+25)$ $\cdot(y^8+10y^7+43y^6+110y^5+177y^4+160y^3+88y^2+32y+16)$ $\cdot(y^{10}-13y^9+\cdots+4y+1)(y^{16}-16y^{15}+\cdots-32y+16)$
c_2, c_6, c_8 c_{12}	$(y^2+4)(y^2-7y+1)^2(y^2+y+1)^2$ $\cdot(y^4-25y^3+240y^2-1057y+1849)^2(y^5+3y^4-3y^2+3y-1)^2$ $\cdot(y^8-17y^7+128y^6-443y^5+503y^4+607y^3+244y^2+48y+4)$ $\cdot(y^8-2y^7+33y^6-74y^5+564y^4-554y^3+1001y^2-114y+169)$ $\cdot(y^8+2y^7-3y^6-2y^5+12y^4-2y^3+5y^2+2y+1)^2$
c_3, c_9	$625(y-1)^{12}(y^4+2y^2+3y+1)(y^4-6y^3+11y^2+6y+1)^2$ $\cdot(y^4+30y^3+407y^2+2742y+8281)^2$ $\cdot(25y^4+300y^3+1510y^2-5365y+3721)$ $\cdot(y^8-8y^7+30y^6-68y^5+103y^4-108y^3+74y^2-28y+1)^2$ $\cdot(25y^8+789y^7+\cdots-150016y+25600)$
c_4, c_{10}	$625y^2(y^2+y+1)^{10}(5y^2+5y+1)^2(y^4+2y^3+3y^2-2y-3)^4$ $\cdot(y^5+3y^4+4y^3-7y^2-17y-9)^2$ $\cdot(25y^8+39y^7+60y^6-83y^5+123y^4+427y^3+732y^2-432y+64)$