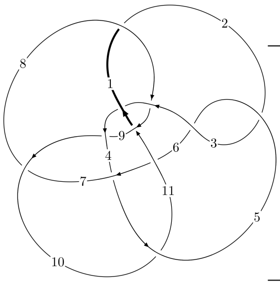
$11n_{178}$ ($K11n_{178}$)



A knot diagram[1]

Linearized knot diagam

$$\to\!\!\downarrow_{8}\to\!\!\downarrow_{5}\to\!\!\downarrow_{1}\to\!\!\downarrow_{7}\to\!\!\downarrow_{3}\to\!\!\downarrow_{11}\to\!\!\uparrow_{10}\to\!\!\downarrow_{3}\to\!\!\uparrow_{4}\to\!\!\downarrow_{5}\to\!\!\uparrow_{9}\to$$

Solving Sequence

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

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

$$I_1^u = \langle 1.44183 \times 10^{20} u^{19} - 4.62808 \times 10^{20} u^{18} + \cdots + 4.02960 \times 10^{22} b + 1.32550 \times 10^{22},$$
$$5.38510 \times 10^{21} u^{19} - 1.93058 \times 10^{22} u^{18} + \cdots + 5.64145 \times 10^{23} a - 1.58764 \times 10^{23},\ u^{20} - 3u^{19} + \cdots + 50u +$$
$$I_2^u = \langle 8.27426 \times 10^{22} a u^{24} + 2.16729 \times 10^{23} u^{24} + \cdots - 8.08063 \times 10^{23} a - 2.16180 \times 10^{24},$$
$$1.10607 \times 10^{23} a u^{24} - 4.35547 \times 10^{23} u^{24} + \cdots - 2.26434 \times 10^{24} a + 5.35326 \times 10^{24},\ u^{25} + 2u^{24} + \cdots - 18u +$$
$$I_3^u = \langle -498u^9 a + 411u^9 + \cdots - 538a - 71,\ 33u^9 a - 50u^9 + \cdots + 36a + 14,$$
$$u^{10} + u^9 + u^8 - u^7 - 7u^6 - 6u^5 - 4u^4 - u^3 + 4u^2 - 1\rangle$$
$$I_4^u = \langle b + u,\ a - u + 1,\ u^3 + u + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 93 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

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

I. $I_1^u =$

$\langle 1.44\times10^{20}u^{19} - 4.63\times10^{20}u^{18} + \cdots + 4.03\times10^{22}b + 1.33\times10^{22},\ 5.39\times10^{21}u^{19} - 1.93\times10^{22}u^{18} + \cdots + 5.64\times10^{23}a - 1.59\times10^{23},\ u^{20} - 3u^{19} + \cdots + 50u + 28\rangle$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} -0.00954560u^{19} + 0.0342214u^{18} + \cdots - 2.04736u + 0.281424 \\ -0.00357808u^{19} + 0.0114852u^{18} + \cdots - 1.57985u - 0.328941 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.00788039u^{19} - 0.0328040u^{18} + \cdots - 0.518617u + 0.751134 \\ 0.00598606u^{19} - 0.0182745u^{18} + \cdots + 0.965413u - 0.0154483 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0104192u^{19} + 0.0403606u^{18} + \cdots - 0.479468u + 0.453996 \\ 0.00910287u^{19} - 0.0324780u^{18} + \cdots + 0.974959u + 0.291739 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0131237u^{19} + 0.0457066u^{18} + \cdots - 3.62721u - 0.0475176 \\ -0.00357808u^{19} + 0.0114852u^{18} + \cdots - 1.57985u - 0.328941 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.0117479u^{19} + 0.0388218u^{18} + \cdots - 2.47010u + 0.992450 \\ -0.00558459u^{19} + 0.0212055u^{18} + \cdots - 0.758704u - 0.267277 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.000551726u^{19} + 0.00433088u^{18} + \cdots + 2.81102u + 0.992999 \\ -0.00916278u^{19} + 0.0352104u^{18} + \cdots + 0.357114u - 0.220651 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0117479u^{19} + 0.0388218u^{18} + \cdots - 2.47010u + 0.992450 \\ -0.00633555u^{19} + 0.0263534u^{18} + \cdots - 0.608667u - 0.367463 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0117479u^{19} + 0.0388218u^{18} + \cdots - 2.47010u + 0.992450 \\ -0.00633555u^{19} + 0.0263534u^{18} + \cdots - 0.608667u - 0.367463 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{2008394464227286266247}{2014801996209644835015 1}u^{19} + \frac{6462622260672532812482}{2014801996209644835015 1}u^{18} + \cdots - \frac{4815041992693204259145 8}{2014801996209644835015 1}u - \frac{1334433284651789932321 90}{2014801996209644835015 1}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{20} - 5u^{19} + \cdots + 24u - 8$
c_2, c_5	$u^{20} - 3u^{19} + \cdots + 50u + 28$
c_3, c_4	$u^{20} - u^{19} + \cdots - 3u^2 + 1$
c_7, c_{11}	$u^{20} - 2u^{19} + \cdots - 5u - 1$
c_8, c_{10}	$u^{20} + 9u^{18} + \cdots + 5u - 1$
c_9	$u^{20} + 5u^{19} + \cdots + 192u + 32$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{20} + 19y^{19} + \cdots + 384y + 64$
c_2, c_5	$y^{20} + 11y^{19} + \cdots + 6180y + 784$
c_3, c_4	$y^{20} - 3y^{19} + \cdots - 6y + 1$
c_7, c_{11}	$y^{20} + 24y^{18} + \cdots - 79y + 1$
c_8, c_{10}	$y^{20} + 18y^{19} + \cdots + 13y + 1$
c_9	$y^{20} + y^{19} + \cdots - 14336y + 1024$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.860797 + 0.516146I$ $a = -0.749789 - 0.590643I$ $b = -0.155130 - 0.305377I$	$-0.02958 - 4.97799I$	$-5.29605 + 5.59335I$
$u = 0.860797 - 0.516146I$ $a = -0.749789 + 0.590643I$ $b = -0.155130 + 0.305377I$	$-0.02958 + 4.97799I$	$-5.29605 - 5.59335I$
$u = -0.837495$ $a = 1.44067$ $b = -0.563826$	-4.10423	8.28190
$u = -0.127511 + 1.189810I$ $a = -0.55333 - 1.51288I$ $b = -0.265516 + 1.136880I$	$5.89336 + 2.36950I$	$5.34088 - 5.91566I$
$u = -0.127511 - 1.189810I$ $a = -0.55333 + 1.51288I$ $b = -0.265516 - 1.136880I$	$5.89336 - 2.36950I$	$5.34088 + 5.91566I$
$u = -1.206690 + 0.010929I$ $a = 0.309849 - 0.484836I$ $b = 0.275436 - 1.241550I$	$-1.50701 - 0.96018I$	$-11.18870 + 6.49006I$
$u = -1.206690 - 0.010929I$ $a = 0.309849 + 0.484836I$ $b = 0.275436 + 1.241550I$	$-1.50701 + 0.96018I$	$-11.18870 - 6.49006I$
$u = -0.044384 + 1.389540I$ $a = -0.092328 - 1.185210I$ $b = -0.230707 + 0.577747I$	$3.02537 + 1.86293I$	$-7.79633 - 3.80746I$
$u = -0.044384 - 1.389540I$ $a = -0.092328 + 1.185210I$ $b = -0.230707 - 0.577747I$	$3.02537 - 1.86293I$	$-7.79633 + 3.80746I$
$u = -0.495317$ $a = 0.784881$ $b = 0.562448$	-0.861131	-11.6540

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.008487 + 0.397854I$ $a = 0.665300 - 0.862267I$ $b = -0.433094 - 0.565353I$	$1.66626 + 1.83421I$	$-0.60394 - 1.52765I$
$u = -0.008487 - 0.397854I$ $a = 0.665300 + 0.862267I$ $b = -0.433094 + 0.565353I$	$1.66626 - 1.83421I$	$-0.60394 + 1.52765I$
$u = 1.70479 + 0.08565I$ $a = 0.138055 - 0.057007I$ $b = 0.519057 + 1.305600I$	$2.91415 - 8.59875I$	$-1.50122 + 6.80502I$
$u = 1.70479 - 0.08565I$ $a = 0.138055 + 0.057007I$ $b = 0.519057 - 1.305600I$	$2.91415 + 8.59875I$	$-1.50122 - 6.80502I$
$u = -0.47740 + 1.67811I$ $a = 0.103149 + 1.154610I$ $b = 1.18053 - 1.97776I$	$4.37107 + 7.54282I$	$-5.65623 - 11.11643I$
$u = -0.47740 - 1.67811I$ $a = 0.103149 - 1.154610I$ $b = 1.18053 + 1.97776I$	$4.37107 - 7.54282I$	$-5.65623 + 11.11643I$
$u = 0.68219 + 1.68930I$ $a = -0.198906 + 1.142030I$ $b = -1.17479 - 1.40102I$	$8.5745 - 16.9983I$	$-2.67254 + 8.37996I$
$u = 0.68219 - 1.68930I$ $a = -0.198906 - 1.142030I$ $b = -1.17479 + 1.40102I$	$8.5745 + 16.9983I$	$-2.67254 - 8.37996I$
$u = 0.78311 + 1.71850I$ $a = 0.300944 - 0.712043I$ $b = 0.284896 + 1.301190I$	$8.00588 - 0.27607I$	$1.56028 - 0.31134I$
$u = 0.78311 - 1.71850I$ $a = 0.300944 + 0.712043I$ $b = 0.284896 - 1.301190I$	$8.00588 + 0.27607I$	$1.56028 + 0.31134I$

II. $\boldsymbol{I_2^u = \langle 8.27 \times 10^{22} a u^{24} + 2.17 \times 10^{23} u^{24} + \cdots - 8.08 \times 10^{23} a - 2.16 \times 10^{24},\ 1.11 \times 10^{23} a u^{24} - 4.36 \times 10^{23} u^{24} + \cdots - 2.26 \times 10^{24} a + 5.35 \times 10^{24},\ u^{25} + 2u^{24} + \cdots - 18u + 5 \rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -0.715728au^{24} - 1.87471u^{24} + \cdots + 6.98979a + 18.6997 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 2.87565au^{24} - 3.09074u^{24} + \cdots - 30.7439a + 31.3997 \\ 0.805852au^{24} + 1.72660u^{24} + \cdots - 8.29141a - 17.8506 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.715728au^{24} + 1.87471u^{24} + \cdots - 5.98979a - 18.6997 \\ -0.387518au^{24} - 1.63688u^{24} + \cdots + 3.57864a + 19.9274 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.715728au^{24} - 1.87471u^{24} + \cdots + 7.98979a + 18.6997 \\ -0.715728au^{24} - 1.87471u^{24} + \cdots + 6.98979a + 18.6997 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1.39796au^{24} - 5.76946u^{24} + \cdots + 13.0810a + 58.4354 \\ 0.379318u^{24} + 0.946149u^{23} + \cdots - 2.74341u - 5.54920 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1.65828au^{24} + 2.07471u^{24} + \cdots + 16.7481a - 22.2997 \\ -1.25756au^{24} + 3.83734u^{24} + \cdots + 14.3782a - 42.0842 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1.39796au^{24} - 5.76946u^{24} + \cdots + 13.0810a + 58.4354 \\ -0.387518au^{24} - 0.813602u^{24} + \cdots + 3.57864a + 7.89146 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1.39796au^{24} - 5.76946u^{24} + \cdots + 13.0810a + 58.4354 \\ -0.387518au^{24} - 0.813602u^{24} + \cdots + 3.57864a + 7.89146 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1156952596349356967504}{199321241668438052749 7}u^{24} - \frac{3249366973641059899377}{1993212416684380527497}u^{23} + \cdots - \frac{6687950546863848585 5810}{1993212416684380527497}u + \frac{1007578567909714831248 8}{1993212416684380527497}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_6	$u^{50} + 5u^{49} + \cdots + 337800u + 93608$
c_2, c_5	$(u^{25} + 2u^{24} + \cdots - 18u + 5)^2$
c_3, c_4	$u^{50} - 4u^{49} + \cdots + 5u - 1$
c_7, c_{11}	$u^{50} - u^{49} + \cdots + 22u - 1$
c_8, c_{10}	$u^{50} + 3u^{48} + \cdots - 10342u - 3931$
c_9	$(u^{25} - u^{24} + \cdots - 18u + 31)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{50} + 13y^{49} + \cdots + 42553508800y + 8762457664$
c_2, c_5	$(y^{25} + 24y^{24} + \cdots - 336y - 25)^2$
c_3, c_4	$y^{50} + 18y^{48} + \cdots + 143y + 1$
c_7, c_{11}	$y^{50} - 21y^{49} + \cdots + 244y + 1$
c_8, c_{10}	$y^{50} + 6y^{49} + \cdots + 33112428y + 15452761$
c_9	$(y^{25} - 17y^{24} + \cdots + 12662y - 961)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.140650 + 0.267150I$ $a = 1.084710 + 0.611862I$ $b = 1.49229 + 0.92382I$	$-1.03856 + 1.14326I$	$-10.5893 + 12.6521I$
$u = -1.140650 + 0.267150I$ $a = 0.113359 + 0.355439I$ $b = 0.633787 + 0.654814I$	$-1.03856 + 1.14326I$	$-10.5893 + 12.6521I$
$u = -1.140650 - 0.267150I$ $a = 1.084710 - 0.611862I$ $b = 1.49229 - 0.92382I$	$-1.03856 - 1.14326I$	$-10.5893 - 12.6521I$
$u = -1.140650 - 0.267150I$ $a = 0.113359 - 0.355439I$ $b = 0.633787 - 0.654814I$	$-1.03856 - 1.14326I$	$-10.5893 - 12.6521I$
$u = -0.163146 + 1.252380I$ $a = -0.356875 - 0.754522I$ $b = -0.959590 + 0.451959I$	$2.89680 + 2.76831I$	$-5.67436 - 1.24863I$
$u = -0.163146 + 1.252380I$ $a = 0.223215 - 1.350440I$ $b = -0.670798 + 0.653559I$	$2.89680 + 2.76831I$	$-5.67436 - 1.24863I$
$u = -0.163146 - 1.252380I$ $a = -0.356875 + 0.754522I$ $b = -0.959590 - 0.451959I$	$2.89680 - 2.76831I$	$-5.67436 + 1.24863I$
$u = -0.163146 - 1.252380I$ $a = 0.223215 + 1.350440I$ $b = -0.670798 - 0.653559I$	$2.89680 - 2.76831I$	$-5.67436 + 1.24863I$
$u = 0.434385 + 1.315760I$ $a = -0.676723 + 0.897603I$ $b = -0.451415 - 0.840386I$	$6.24414 - 3.55600I$	$4.03991 + 3.49531I$
$u = 0.434385 + 1.315760I$ $a = 0.14272 - 1.58350I$ $b = 1.25444 + 1.50173I$	$6.24414 - 3.55600I$	$4.03991 + 3.49531I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.434385 - 1.315760I$ $a = -0.676723 - 0.897603I$ $b = -0.451415 + 0.840386I$	$6.24414 + 3.55600I$	$4.03991 - 3.49531I$
$u = 0.434385 - 1.315760I$ $a = 0.14272 + 1.58350I$ $b = 1.25444 - 1.50173I$	$6.24414 + 3.55600I$	$4.03991 - 3.49531I$
$u = 0.15084 + 1.44113I$ $a = -0.365971 - 1.348100I$ $b = 1.12800 + 1.43516I$	$6.70056 - 6.60168I$	$4.95046 + 12.30292I$
$u = 0.15084 + 1.44113I$ $a = 0.23756 + 1.60715I$ $b = -0.035729 - 0.763533I$	$6.70056 - 6.60168I$	$4.95046 + 12.30292I$
$u = 0.15084 - 1.44113I$ $a = -0.365971 + 1.348100I$ $b = 1.12800 - 1.43516I$	$6.70056 + 6.60168I$	$4.95046 - 12.30292I$
$u = 0.15084 - 1.44113I$ $a = 0.23756 - 1.60715I$ $b = -0.035729 + 0.763533I$	$6.70056 + 6.60168I$	$4.95046 - 12.30292I$
$u = -0.148436 + 0.506372I$ $a = 0.388829 + 0.383713I$ $b = 1.118110 - 0.274856I$	$-2.53372 + 0.16719I$	$-3.64574 - 0.21536I$
$u = -0.148436 + 0.506372I$ $a = 3.02455 + 0.27470I$ $b = -0.251824 - 0.797330I$	$-2.53372 + 0.16719I$	$-3.64574 - 0.21536I$
$u = -0.148436 - 0.506372I$ $a = 0.388829 - 0.383713I$ $b = 1.118110 + 0.274856I$	$-2.53372 - 0.16719I$	$-3.64574 + 0.21536I$
$u = -0.148436 - 0.506372I$ $a = 3.02455 - 0.27470I$ $b = -0.251824 + 0.797330I$	$-2.53372 - 0.16719I$	$-3.64574 + 0.21536I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.475339$ $a = 0.528924 + 0.781882I$ $b = -0.430675 + 0.809478I$	2.81112	0.202280
$u = 0.475339$ $a = 0.528924 - 0.781882I$ $b = -0.430675 - 0.809478I$	2.81112	0.202280
$u = -1.53222$ $a = 0.078790 + 0.191294I$ $b = 0.568791 - 1.033300I$	3.05217	0.159530
$u = -1.53222$ $a = 0.078790 - 0.191294I$ $b = 0.568791 + 1.033300I$	3.05217	0.159530
$u = 0.466383 + 0.024974I$ $a = 0.624833 - 0.860638I$ $b = -0.840463 - 0.646691I$	$1.53850 - 4.51240I$	$-4.65188 + 7.14304I$
$u = 0.466383 + 0.024974I$ $a = 1.42335 - 2.52636I$ $b = 0.735817 + 0.431578I$	$1.53850 - 4.51240I$	$-4.65188 + 7.14304I$
$u = 0.466383 - 0.024974I$ $a = 0.624833 + 0.860638I$ $b = -0.840463 + 0.646691I$	$1.53850 + 4.51240I$	$-4.65188 - 7.14304I$
$u = 0.466383 - 0.024974I$ $a = 1.42335 + 2.52636I$ $b = 0.735817 - 0.431578I$	$1.53850 + 4.51240I$	$-4.65188 - 7.14304I$
$u = 1.54406$ $a = -0.230436$ $b = 0.365605$	-6.61075	-51.2600
$u = 1.54406$ $a = -1.77941$ $b = -1.23498$	-6.61075	-51.2600

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.18525 + 1.56503I$ $a = -0.482316 - 0.856149I$ $b = 0.583599 + 0.895127I$	$3.52121 - 5.29385I$	$-3.74916 + 8.30350I$
$u = -0.18525 + 1.56503I$ $a = 0.672798 - 0.276435I$ $b = 1.161330 + 0.309043I$	$3.52121 - 5.29385I$	$-3.74916 + 8.30350I$
$u = -0.18525 - 1.56503I$ $a = -0.482316 + 0.856149I$ $b = 0.583599 - 0.895127I$	$3.52121 + 5.29385I$	$-3.74916 - 8.30350I$
$u = -0.18525 - 1.56503I$ $a = 0.672798 + 0.276435I$ $b = 1.161330 - 0.309043I$	$3.52121 + 5.29385I$	$-3.74916 - 8.30350I$
$u = 0.003969 + 0.337154I$ $a = 0.650002 + 0.785649I$ $b = -1.171020 + 0.504584I$	$-0.56308 + 6.78110I$	$3.38343 - 3.19298I$
$u = 0.003969 + 0.337154I$ $a = 7.17919 - 1.72929I$ $b = -0.074163 + 0.750946I$	$-0.56308 + 6.78110I$	$3.38343 - 3.19298I$
$u = 0.003969 - 0.337154I$ $a = 0.650002 - 0.785649I$ $b = -1.171020 - 0.504584I$	$-0.56308 - 6.78110I$	$3.38343 + 3.19298I$
$u = 0.003969 - 0.337154I$ $a = 7.17919 + 1.72929I$ $b = -0.074163 - 0.750946I$	$-0.56308 - 6.78110I$	$3.38343 + 3.19298I$
$u = 0.19448 + 1.65842I$ $a = 0.422264 - 0.836955I$ $b = -1.43214 + 1.44496I$	$7.41514 + 1.27639I$	$2.55128 - 0.67478I$
$u = 0.19448 + 1.65842I$ $a = -0.325781 + 0.877177I$ $b = -0.010779 - 1.084000I$	$7.41514 + 1.27639I$	$2.55128 - 0.67478I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.19448 - 1.65842I$ $a = 0.422264 + 0.836955I$ $b = -1.43214 - 1.44496I$	$7.41514 - 1.27639I$	$2.55128 + 0.67478I$
$u = 0.19448 - 1.65842I$ $a = -0.325781 - 0.877177I$ $b = -0.010779 + 1.084000I$	$7.41514 - 1.27639I$	$2.55128 + 0.67478I$
$u = -0.08719 + 1.73481I$ $a = 0.436377 + 0.874340I$ $b = -1.81263 - 1.76872I$	$7.66608 + 6.24371I$	$4.09267 - 6.21663I$
$u = -0.08719 + 1.73481I$ $a = -0.211132 + 1.015010I$ $b = 0.62955 - 1.66105I$	$7.66608 + 6.24371I$	$4.09267 - 6.21663I$
$u = -0.08719 - 1.73481I$ $a = 0.436377 - 0.874340I$ $b = -1.81263 + 1.76872I$	$7.66608 - 6.24371I$	$4.09267 + 6.21663I$
$u = -0.08719 - 1.73481I$ $a = -0.211132 - 1.015010I$ $b = 0.62955 + 1.66105I$	$7.66608 - 6.24371I$	$4.09267 + 6.21663I$
$u = -0.76896 + 1.70316I$ $a = -0.267227 - 1.109740I$ $b = -1.14143 + 1.30331I$	$8.00509 + 8.45240I$	$0. - 6.49999I$
$u = -0.76896 + 1.70316I$ $a = 0.259474 + 0.720363I$ $b = 0.411624 - 1.049270I$	$8.00509 + 8.45240I$	$0. - 6.49999I$
$u = -0.76896 - 1.70316I$ $a = -0.267227 + 1.109740I$ $b = -1.14143 - 1.30331I$	$8.00509 - 8.45240I$	$0. + 6.49999I$
$u = -0.76896 - 1.70316I$ $a = 0.259474 - 0.720363I$ $b = 0.411624 + 1.049270I$	$8.00509 - 8.45240I$	$0. + 6.49999I$

III. $I^u_3 = \langle -498u^9a + 411u^9 + \cdots - 538a - 71,\ 33u^9a - 50u^9 + \cdots + 36a + 14,\ u^{10} + u^9 + \cdots + 4u^2 - 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ 0.256305au^9 - 0.211529u^9 + \cdots + 0.276891a + 0.0365414 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.202265au^9 + 0.388574u^9 + \cdots + 1.23932a + 1.61657 \\ -0.128667au^9 - 0.533196u^9 + \cdots - 0.0386001a + 0.440041 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.256305au^9 - 0.211529u^9 + \cdots - 0.723109a + 0.0365414 \\ 0.145651au^9 + 1.11889u^9 + \cdots - 0.256305a + 0.935666 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.256305au^9 - 0.211529u^9 + \cdots + 1.27689a + 0.0365414 \\ 0.256305au^9 - 0.211529u^9 + \cdots + 0.276891a + 0.0365414 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.276891au^9 + 0.446217u^9 + \cdots - 0.283067a - 0.566135 \\ -0.793103u^9 - 1.10345u^8 + \cdots - 1.24138u - 1.13793 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.0386001au^9 + 0.594442u^9 + \cdots + 0.511580a - 0.321668 \\ -0.325785au^9 - 0.513639u^9 + \cdots + 0.202265a - 0.354092 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.276891au^9 + 0.446217u^9 + \cdots - 0.283067a - 0.566135 \\ 0.145651au^9 - 0.501801u^9 + \cdots - 0.256305a - 1.65054 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.276891au^9 + 0.446217u^9 + \cdots - 0.283067a - 0.566135 \\ 0.145651au^9 - 0.501801u^9 + \cdots - 0.256305a - 1.65054 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -\frac{70}{29}u^9 - \frac{139}{29}u^8 - \frac{166}{29}u^7 + 2u^6 + \frac{490}{29}u^5 + \frac{1077}{29}u^4 + \frac{738}{29}u^3 + \frac{413}{29}u^2 - \frac{44}{29}u - \frac{485}{29}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{20} - 4u^{19} + \cdots + 24u + 8$
c_2	$(u^{10} - u^9 + u^8 + u^7 - 7u^6 + 6u^5 - 4u^4 + u^3 + 4u^2 - 1)^2$
c_3	$u^{20} + 7u^{19} + \cdots - u - 1$
c_4	$u^{20} - 7u^{19} + \cdots + u - 1$
c_5	$(u^{10} + u^9 + u^8 - u^7 - 7u^6 - 6u^5 - 4u^4 - u^3 + 4u^2 - 1)^2$
c_6	$u^{20} + 4u^{19} + \cdots - 24u + 8$
c_7	$u^{20} + 6u^{19} + \cdots + 8u + 1$
c_8	$u^{20} + u^{19} + \cdots - 4u - 1$
c_9	$u^{20} - 4u^{18} + \cdots + 146u^2 - 31$
c_{10}	$u^{20} - u^{19} + \cdots + 4u - 1$
c_{11}	$u^{20} - 6u^{19} + \cdots - 8u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_6	$y^{20} - 10y^{19} + \cdots + 832y + 64$
c_2, c_5	$(y^{10} + y^9 - 11y^8 - 11y^7 + 39y^6 + 24y^5 - 54y^4 - 19y^3 + 24y^2 - 8y + 1)^2$
c_3, c_4	$y^{20} - 9y^{19} + \cdots + 7y + 1$
c_7, c_{11}	$y^{20} - 2y^{19} + \cdots - 14y + 1$
c_8, c_{10}	$y^{20} - y^{19} + \cdots - 22y + 1$
c_9	$(y^{10} - 4y^9 + \cdots + 146y - 31)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.162027+1.093500I$ $a=-0.593689+0.666269I$ $b=-0.965025-0.562961I$	$3.13638-3.94572I$	$-1.58269+5.47828I$
$u=-0.162027+1.093500I$ $a=\quad 0.91912+1.26340I$ $b=-0.554998-0.469577I$	$3.13638-3.94572I$	$-1.58269+5.47828I$
$u=-0.162027-1.093500I$ $a=-0.593689-0.666269I$ $b=-0.965025+0.562961I$	$3.13638+3.94572I$	$-1.58269-5.47828I$
$u=-0.162027-1.093500I$ $a=\quad 0.91912-1.26340I$ $b=-0.554998+0.469577I$	$3.13638+3.94572I$	$-1.58269-5.47828I$
$u=-1.184430+0.161063I$ $a=-1.044950-0.712567I$ $b=-1.47068-1.35942I$	$-0.91356+1.34180I$	$8.0489-15.8298I$
$u=-1.184430+0.161063I$ $a=\quad 0.266174+0.351567I$ $b=\quad 0.614102+0.689658I$	$-0.91356+1.34180I$	$8.0489-15.8298I$
$u=-1.184430-0.161063I$ $a=-1.044950+0.712567I$ $b=-1.47068+1.35942I$	$-0.91356-1.34180I$	$8.0489+15.8298I$
$u=-1.184430-0.161063I$ $a=\quad 0.266174-0.351567I$ $b=\quad 0.614102-0.689658I$	$-0.91356-1.34180I$	$8.0489+15.8298I$
$u=\quad 0.493258+0.211168I$ $a=\quad 0.030687+0.614200I$ $b=-1.053900-0.481170I$	$-0.98335-6.94564I$	$-13.6667+10.0962I$
$u=\quad 0.493258+0.211168I$ $a=\quad 1.07089+4.10487I$ $b=\quad 0.278877+0.531389I$	$-0.98335-6.94564I$	$-13.6667+10.0962I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.493258 - 0.211168I$ $a = 0.030687 - 0.614200I$ $b = -1.053900 + 0.481170I$	$-0.98335 + 6.94564I$	$-13.6667 - 10.0962I$
$u = 0.493258 - 0.211168I$ $a = 1.07089 - 4.10487I$ $b = 0.278877 - 0.531389I$	$-0.98335 + 6.94564I$	$-13.6667 - 10.0962I$
$u = -0.510374$ $a = -0.34052 + 1.84999I$ $b = 0.789530 + 0.525018I$	-3.56392	-13.6180
$u = -0.510374$ $a = -0.34052 - 1.84999I$ $b = 0.789530 - 0.525018I$	-3.56392	-13.6180
$u = -0.19822 + 1.54173I$ $a = -0.059083 - 1.131320I$ $b = 0.371545 + 1.039520I$	$6.26864 + 5.98904I$	$-2.92384 - 3.18632I$
$u = -0.19822 + 1.54173I$ $a = -0.222760 + 1.238820I$ $b = 0.96108 - 1.49878I$	$6.26864 + 5.98904I$	$-2.92384 - 3.18632I$
$u = -0.19822 - 1.54173I$ $a = -0.059083 + 1.131320I$ $b = 0.371545 - 1.039520I$	$6.26864 - 5.98904I$	$-2.92384 + 3.18632I$
$u = -0.19822 - 1.54173I$ $a = -0.222760 - 1.238820I$ $b = 0.96108 + 1.49878I$	$6.26864 - 5.98904I$	$-2.92384 + 3.18632I$
$u = 1.61322$ $a = 1.68819$ $b = 1.26726$	-6.51752	34.8670
$u = 1.61322$ $a = 0.260087$ $b = -0.208312$	-6.51752	34.8670

IV. $\boldsymbol{I_4^u = \langle b+u,\ a-u+1,\ u^3+u+1\rangle}$

(i) Arc colorings

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

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

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

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

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

$$a_2 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^2-u+2 \\ -u^2+u-1 \end{pmatrix}$$

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

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

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8u^2+4u-11$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.341164 + 1.161540I$ $a = -0.658836 + 1.161540I$ $b = -0.341164 - 1.161540I$	$5.50124 - 1.58317I$	$0.22694 - 1.69425I$
$u = 0.341164 - 1.161540I$ $a = -0.658836 - 1.161540I$ $b = -0.341164 + 1.161540I$	$5.50124 + 1.58317I$	$0.22694 + 1.69425I$
$u = -0.682328$ $a = -1.68233$ $b = 0.682328$	-4.42273	-17.4540

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^3+u^2+1)(u^{20}-5u^{19}+\cdots+24u-8)(u^{20}-4u^{19}+\cdots+24u+8)$ $\cdot(u^{50}+5u^{49}+\cdots+337800u+93608)$
c_2	$(u^3+u-1)(u^{10}-u^9+u^8+u^7-7u^6+6u^5-4u^4+u^3+4u^2-1)^2$ $\cdot(u^{20}-3u^{19}+\cdots+50u+28)(u^{25}+2u^{24}+\cdots-18u+5)^2$
c_3	$(u^3+u^2+1)(u^{20}-u^{19}+\cdots-3u^2+1)(u^{20}+7u^{19}+\cdots-u-1)$ $\cdot(u^{50}-4u^{49}+\cdots+5u-1)$
c_4	$(u^3-u^2-1)(u^{20}-7u^{19}+\cdots+u-1)(u^{20}-u^{19}+\cdots-3u^2+1)$ $\cdot(u^{50}-4u^{49}+\cdots+5u-1)$
c_5	$(u^3+u+1)(u^{10}+u^9+u^8-u^7-7u^6-6u^5-4u^4-u^3+4u^2-1)^2$ $\cdot(u^{20}-3u^{19}+\cdots+50u+28)(u^{25}+2u^{24}+\cdots-18u+5)^2$
c_6	$(u^3-u^2-1)(u^{20}-5u^{19}+\cdots+24u-8)(u^{20}+4u^{19}+\cdots-24u+8)$ $\cdot(u^{50}+5u^{49}+\cdots+337800u+93608)$
c_7	$(u^3+2u^2+u-1)(u^{20}-2u^{19}+\cdots-5u-1)(u^{20}+6u^{19}+\cdots+8u+1)$ $\cdot(u^{50}-u^{49}+\cdots+22u-1)$
c_8	$(u^3+u-1)(u^{20}+9u^{18}+\cdots+5u-1)(u^{20}+u^{19}+\cdots-4u-1)$ $\cdot(u^{50}+3u^{48}+\cdots-10342u-3931)$
c_9	$u^3(u^{20}-4u^{18}+\cdots+146u^2-31)(u^{20}+5u^{19}+\cdots+192u+32)$ $\cdot(u^{25}-u^{24}+\cdots-18u+31)^2$
c_{10}	$(u^3+u+1)(u^{20}+9u^{18}+\cdots+5u-1)(u^{20}-u^{19}+\cdots+4u-1)$ $\cdot(u^{50}+3u^{48}+\cdots-10342u-3931)$
c_{11}	$(u^3-2u^2+u+1)(u^{20}-6u^{19}+\cdots-8u+1)(u^{20}-2u^{19}+\cdots-5u-1)$ $\cdot(u^{50}-u^{49}+\cdots+22u-1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_6	$(y^3 - y^2 - 2y - 1)(y^{20} - 10y^{19} + \cdots + 832y + 64)$ $\cdot (y^{20} + 19y^{19} + \cdots + 384y + 64)$ $\cdot (y^{50} + 13y^{49} + \cdots + 42553508800y + 8762457664)$
c_2, c_5	$(y^3 + 2y^2 + y - 1)$ $\cdot (y^{10} + y^9 - 11y^8 - 11y^7 + 39y^6 + 24y^5 - 54y^4 - 19y^3 + 24y^2 - 8y + 1)^2$ $\cdot (y^{20} + 11y^{19} + \cdots + 6180y + 784)(y^{25} + 24y^{24} + \cdots - 336y - 25)^2$
c_3, c_4	$(y^3 - y^2 - 2y - 1)(y^{20} - 9y^{19} + \cdots + 7y + 1)(y^{20} - 3y^{19} + \cdots - 6y + 1)$ $\cdot (y^{50} + 18y^{48} + \cdots + 143y + 1)$
c_7, c_{11}	$(y^3 - 2y^2 + 5y - 1)(y^{20} + 24y^{18} + \cdots - 79y + 1)$ $\cdot (y^{20} - 2y^{19} + \cdots - 14y + 1)(y^{50} - 21y^{49} + \cdots + 244y + 1)$
c_8, c_{10}	$(y^3 + 2y^2 + y - 1)(y^{20} - y^{19} + \cdots - 22y + 1)$ $\cdot (y^{20} + 18y^{19} + \cdots + 13y + 1)$ $\cdot (y^{50} + 6y^{49} + \cdots + 33112428y + 15452761)$
c_9	$y^3(y^{10} - 4y^9 + \cdots + 146y - 31)^2(y^{20} + y^{19} + \cdots - 14336y + 1024)$ $\cdot (y^{25} - 17y^{24} + \cdots + 12662y - 961)^2$