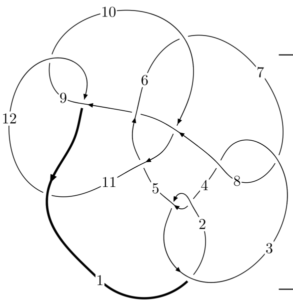
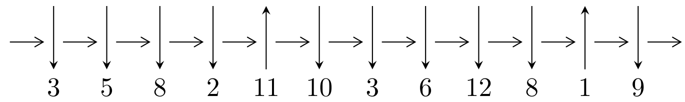
$12n_{0128}$ ($K12n_{0128}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 1.10179 \times 10^{326} u^{84} + 4.59940 \times 10^{326} u^{83} + \cdots + 6.70794 \times 10^{327} b + 9.84549 \times 10^{328}, \\
& - 1.92301 \times 10^{326} u^{84} - 4.87952 \times 10^{326} u^{83} + \cdots + 2.68317 \times 10^{328} a - 1.80541 \times 10^{329}, \\
& u^{85} + 3u^{84} + \cdots + 2560u - 512 \rangle \\
I_2^u = \langle & b^2 - 2bu - 3b + 8u + 13,\ a,\ u^2 + u - 1 \rangle
\end{aligned}$$

$$\begin{aligned}
I_1^v = \langle & a,\ -117084v^8 - 101146v^7 + \cdots + 178147b - 213819, \\
& v^9 + v^8 + 12v^7 + 7v^6 + 37v^5 - v^4 + 10v^2 + 5v + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 98 representations.

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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. $\boldsymbol{I^u_1 = \langle 1.10 \times 10^{326} u^{84} + 4.60 \times 10^{326} u^{83} + \cdots + 6.71 \times 10^{327} b + 9.85 \times 10^{328},\ -1.92 \times 10^{326} u^{84} - 4.88 \times 10^{326} u^{83} + \cdots + 2.68 \times 10^{328} a - 1.81 \times 10^{329},\ u^{85} + 3u^{84} + \cdots + 2560u - 512\rangle}$

(i) Arc colorings

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

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

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

$$a_{10} = \begin{pmatrix} 0.00716693u^{84} + 0.0181856u^{83} + \cdots - 41.0816u + 6.72864 \\ -0.0164251u^{84} - 0.0685666u^{83} + \cdots + 14.1484u - 14.6774 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.00716693u^{84} + 0.0181856u^{83} + \cdots - 41.0816u + 6.72864 \\ -0.0173695u^{84} - 0.0700008u^{83} + \cdots + 26.3047u - 16.3747 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 0.0128640u^{84} + 0.0390675u^{83} + \cdots - 60.0504u + 9.18109 \\ 0.0370542u^{84} + 0.136353u^{83} + \cdots - 145.401u + 47.2282 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0104888u^{84} - 0.0265281u^{83} + \cdots + 86.9445u - 14.0203 \\ 0.00275780u^{84} + 0.00808818u^{83} + \cdots + 16.3180u - 2.98126 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.00825383u^{84} + 0.0201646u^{83} + \cdots - 65.1654u + 10.2484 \\ -0.00335614u^{84} - 0.00827244u^{83} + \cdots + 37.7731u - 6.12557 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.00825383u^{84} + 0.0201646u^{83} + \cdots - 65.1654u + 10.2484 \\ 0.00223501u^{84} + 0.00636347u^{83} + \cdots - 21.7790u + 3.77196 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0104888u^{84} + 0.0265281u^{83} + \cdots - 86.9445u + 14.0203 \\ 0.00223501u^{84} + 0.00636347u^{83} + \cdots - 21.7790u + 3.77196 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.000908687u^{84} - 0.00204367u^{83} + \cdots - 16.4201u + 3.85488 \\ -0.0185413u^{84} - 0.0750717u^{83} + \cdots - 7.29914u - 9.22684 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.381801u^{84} + 1.38285u^{83} + \cdots - 1273.67u + 380.918$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{85} + 38u^{84} + \cdots - 213u + 1$
c_2, c_4	$u^{85} - 12u^{84} + \cdots - u + 1$
c_3, c_7	$u^{85} - 3u^{84} + \cdots + 2560u + 512$
c_5	$u^{85} + 3u^{84} + \cdots + 112806u + 16279$
c_6	$u^{85} - u^{84} + \cdots + 28266u + 22877$
c_8	$u^{85} - 4u^{84} + \cdots - 5u + 1$
c_9, c_{12}	$u^{85} - 4u^{84} + \cdots + 7u + 1$
c_{10}	$u^{85} - 8u^{84} + \cdots + 192u + 16$
c_{11}	$u^{85} - 38u^{84} + \cdots + 27u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{85} + 30y^{84} + \cdots + 27491y - 1$
c_2, c_4	$y^{85} - 38y^{84} + \cdots - 213y - 1$
c_3, c_7	$y^{85} + 51y^{84} + \cdots - 3932160y - 262144$
c_5	$y^{85} - 81y^{84} + \cdots + 5075593862y - 265005841$
c_6	$y^{85} - 57y^{84} + \cdots - 21266860578y - 523357129$
c_8	$y^{85} - 22y^{84} + \cdots + 31y - 1$
c_9, c_{12}	$y^{85} + 38y^{84} + \cdots + 27y - 1$
c_{10}	$y^{85} + 20y^{84} + \cdots + 12160y - 256$
c_{11}	$y^{85} + 22y^{84} + \cdots + 1735y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.079250 + 0.084385I$ $a = 0.314607 - 0.642851I$ $b = -0.263280 + 0.005137I$	$-1.013250 + 0.170939I$	0
$u = 1.079250 - 0.084385I$ $a = 0.314607 + 0.642851I$ $b = -0.263280 - 0.005137I$	$-1.013250 - 0.170939I$	0
$u = -1.111280 + 0.071551I$ $a = 0.643580 - 0.926472I$ $b = 0.321561 - 0.222730I$	$3.33969 + 2.83227I$	0
$u = -1.111280 - 0.071551I$ $a = 0.643580 + 0.926472I$ $b = 0.321561 + 0.222730I$	$3.33969 - 2.83227I$	0
$u = -0.129045 + 1.113980I$ $a = 1.74054 - 0.17640I$ $b = 1.96919 - 0.18618I$	$0.094102 - 1.056740I$	0
$u = -0.129045 - 1.113980I$ $a = 1.74054 + 0.17640I$ $b = 1.96919 + 0.18618I$	$0.094102 + 1.056740I$	0
$u = -0.210154 + 1.114290I$ $a = -0.839901 - 0.413606I$ $b = -1.63994 - 1.01283I$	$-3.15620 + 2.51605I$	0
$u = -0.210154 - 1.114290I$ $a = -0.839901 + 0.413606I$ $b = -1.63994 + 1.01283I$	$-3.15620 - 2.51605I$	0
$u = 0.433540 + 1.050740I$ $a = 0.587198 + 0.587186I$ $b = 0.993744 + 0.855462I$	$0.982642 + 0.642938I$	0
$u = 0.433540 - 1.050740I$ $a = 0.587198 - 0.587186I$ $b = 0.993744 - 0.855462I$	$0.982642 - 0.642938I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.257695 + 1.109990I$ $a = -0.04586 - 1.76277I$ $b = 0.070299 - 0.881993I$	$-1.09681 + 2.37421I$	0
$u = -0.257695 - 1.109990I$ $a = -0.04586 + 1.76277I$ $b = 0.070299 + 0.881993I$	$-1.09681 - 2.37421I$	0
$u = 0.262541 + 1.168940I$ $a = -0.497533 + 0.412605I$ $b = -1.021630 - 0.852821I$	$2.10819 - 3.90878I$	0
$u = 0.262541 - 1.168940I$ $a = -0.497533 - 0.412605I$ $b = -1.021630 + 0.852821I$	$2.10819 + 3.90878I$	0
$u = 0.218930 + 1.186920I$ $a = 0.438793 + 0.422340I$ $b = 1.29909 - 1.31313I$	$2.18193 - 1.17088I$	0
$u = 0.218930 - 1.186920I$ $a = 0.438793 - 0.422340I$ $b = 1.29909 + 1.31313I$	$2.18193 + 1.17088I$	0
$u = -0.758522 + 0.188313I$ $a = 1.47819 - 0.47702I$ $b = 2.18056 + 0.45533I$	$-1.13123 - 4.17645I$	$-11.8176 + 9.1818I$
$u = -0.758522 - 0.188313I$ $a = 1.47819 + 0.47702I$ $b = 2.18056 - 0.45533I$	$-1.13123 + 4.17645I$	$-11.8176 - 9.1818I$
$u = -0.341078 + 1.170670I$ $a = -1.71012 - 0.11107I$ $b = -2.09658 - 0.30512I$	$-0.41725 + 6.01567I$	0
$u = -0.341078 - 1.170670I$ $a = -1.71012 + 0.11107I$ $b = -2.09658 + 0.30512I$	$-0.41725 - 6.01567I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.041071 + 1.235810I$ $a = 0.35122 + 1.48542I$ $b = 0.799108 + 0.646539I$	$3.32593 - 3.12666I$	0
$u = 0.041071 - 1.235810I$ $a = 0.35122 - 1.48542I$ $b = 0.799108 - 0.646539I$	$3.32593 + 3.12666I$	0
$u = -1.206060 + 0.339502I$ $a = -0.333951 - 0.966861I$ $b = 0.172479 - 0.075194I$	$-1.81678 - 5.27916I$	0
$u = -1.206060 - 0.339502I$ $a = -0.333951 + 0.966861I$ $b = 0.172479 + 0.075194I$	$-1.81678 + 5.27916I$	0
$u = -0.573407 + 0.367957I$ $a = 0.02490 - 1.59180I$ $b = 0.90204 - 1.21732I$	$-3.03530 - 2.32112I$	$-18.2811 + 2.9821I$
$u = -0.573407 - 0.367957I$ $a = 0.02490 + 1.59180I$ $b = 0.90204 + 1.21732I$	$-3.03530 + 2.32112I$	$-18.2811 - 2.9821I$
$u = 0.091692 + 1.317030I$ $a = 0.134568 - 0.539810I$ $b = 0.21801 + 1.72217I$	$3.52281 - 0.13174I$	0
$u = 0.091692 - 1.317030I$ $a = 0.134568 + 0.539810I$ $b = 0.21801 - 1.72217I$	$3.52281 + 0.13174I$	0
$u = -0.413209 + 1.277050I$ $a = -0.33458 + 1.53181I$ $b = -0.762037 + 0.868186I$	$2.39077 + 8.65291I$	0
$u = -0.413209 - 1.277050I$ $a = -0.33458 - 1.53181I$ $b = -0.762037 - 0.868186I$	$2.39077 - 8.65291I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.312068 + 1.307370I$ $a = -0.183364 - 0.488108I$ $b = -0.82725 + 1.90837I$	$3.08119 - 5.55867I$	0
$u = 0.312068 - 1.307370I$ $a = -0.183364 + 0.488108I$ $b = -0.82725 - 1.90837I$	$3.08119 + 5.55867I$	0
$u = -0.459021 + 0.459779I$ $a = -1.51990 - 0.28470I$ $b = -2.42465 - 1.18474I$	$-3.21369 + 0.63442I$	$-17.2881 - 6.4476I$
$u = -0.459021 - 0.459779I$ $a = -1.51990 + 0.28470I$ $b = -2.42465 + 1.18474I$	$-3.21369 - 0.63442I$	$-17.2881 + 6.4476I$
$u = 0.634951 + 0.073211I$ $a = 0.544294 - 0.378389I$ $b = -0.448469 + 0.000623I$	$-0.938890 - 0.000686I$	$-9.17733 + 0.04419I$
$u = 0.634951 - 0.073211I$ $a = 0.544294 + 0.378389I$ $b = -0.448469 - 0.000623I$	$-0.938890 + 0.000686I$	$-9.17733 - 0.04419I$
$u = 1.237320 + 0.581154I$ $a = -0.335451 - 0.582811I$ $b = -0.266329 - 0.154538I$	$1.88882 + 2.34511I$	0
$u = 1.237320 - 0.581154I$ $a = -0.335451 + 0.582811I$ $b = -0.266329 + 0.154538I$	$1.88882 - 2.34511I$	0
$u = -0.326856 + 1.339410I$ $a = 0.750171 - 0.025748I$ $b = 1.332330 - 0.310227I$	$4.34006 - 0.60753I$	0
$u = -0.326856 - 1.339410I$ $a = 0.750171 + 0.025748I$ $b = 1.332330 + 0.310227I$	$4.34006 + 0.60753I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.143186 + 1.381320I$ $a = 0.727087 + 0.371136I$ $b = 1.59812 + 0.81572I$	$-1.24862 + 7.38729I$	0
$u = -0.143186 - 1.381320I$ $a = 0.727087 - 0.371136I$ $b = 1.59812 - 0.81572I$	$-1.24862 - 7.38729I$	0
$u = 0.607638 + 0.026477I$ $a = 0.314965 - 0.062706I$ $b = 5.61070 + 1.95263I$	$-1.01649 + 2.08350I$	$-108.2002 - 27.5787I$
$u = 0.607638 - 0.026477I$ $a = 0.314965 + 0.062706I$ $b = 5.61070 - 1.95263I$	$-1.01649 - 2.08350I$	$-108.2002 + 27.5787I$
$u = 0.573976 + 0.144239I$ $a = -0.630973 + 0.039451I$ $b = -3.74818 - 1.33751I$	$-1.01583 - 1.80194I$	$-34.3945 + 9.4437I$
$u = 0.573976 - 0.144239I$ $a = -0.630973 - 0.039451I$ $b = -3.74818 + 1.33751I$	$-1.01583 + 1.80194I$	$-34.3945 - 9.4437I$
$u = 0.581059$ $a = 0.632960$ $b = -0.432804$	-0.943887	-9.70520
$u = 0.64849 + 1.26742I$ $a = -0.718497 + 0.104136I$ $b = -1.213270 + 0.001074I$	$2.43921 - 5.21595I$	0
$u = 0.64849 - 1.26742I$ $a = -0.718497 - 0.104136I$ $b = -1.213270 - 0.001074I$	$2.43921 + 5.21595I$	0
$u = -1.40213 + 0.33857I$ $a = 0.330302 + 0.857940I$ $b = -0.097754 - 0.133086I$	$0.33638 - 10.54090I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.40213-0.33857I$ $a=\ \ 0.330302-0.857940I$ $b=-0.097754+0.133086I$	$0.33638+10.54090I$	0
$u=-0.056938+0.544127I$ $a=\ \ 0.47075-2.43754I$ $b=\ \ 0.0150861-0.0630346I$	$-5.59621-1.18326I$	$-2.58478-2.54783I$
$u=-0.056938-0.544127I$ $a=\ \ 0.47075+2.43754I$ $b=\ \ 0.0150861+0.0630346I$	$-5.59621+1.18326I$	$-2.58478+2.54783I$
$u=-0.188367+0.482280I$ $a=\ \ 0.01185+1.83477I$ $b=\ \ 0.515477-0.218779I$	$1.59907-2.42394I$	$-1.69948+4.54557I$
$u=-0.188367-0.482280I$ $a=\ \ 0.01185-1.83477I$ $b=\ \ 0.515477+0.218779I$	$1.59907+2.42394I$	$-1.69948-4.54557I$
$u=\ \ 0.014000+0.513349I$ $a=-0.98858+2.43038I$ $b=-0.0540751+0.0186456I$	$-4.86894-7.11123I$	$0.90699+6.44296I$
$u=\ \ 0.014000-0.513349I$ $a=-0.98858-2.43038I$ $b=-0.0540751-0.0186456I$	$-4.86894+7.11123I$	$0.90699-6.44296I$
$u=\ \ 1.49443+0.02360I$ $a=-0.263064-0.608348I$ $b=\ \ 0.056186+0.172181I$	$0.90720-4.33616I$	0
$u=\ \ 1.49443-0.02360I$ $a=-0.263064+0.608348I$ $b=\ \ 0.056186-0.172181I$	$0.90720+4.33616I$	0
$u=\ \ 0.47007+1.42149I$ $a=\ \ 1.025930-0.210323I$ $b=\ \ 1.94222-0.59005I$	$3.61530-5.88108I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \;\; 0.47007 - 1.42149I$ $a = \;\; 1.025930 + 0.210323I$ $b = \;\; 1.94222 + 0.59005I$	$3.61530 + 5.88108I$	0
$u = -0.129721 + 0.460651I$ $a = -0.94046 + 1.36587I$ $b = -2.80445 + 1.09956I$	$-2.08258 + 2.71217I$	$-0.93392 - 9.03807I$
$u = -0.129721 - 0.460651I$ $a = -0.94046 - 1.36587I$ $b = -2.80445 - 1.09956I$	$-2.08258 - 2.71217I$	$-0.93392 + 9.03807I$
$u = -0.69533 + 1.35551I$ $a = -1.115150 - 0.202740I$ $b = -2.11433 - 0.55269I$	$1.45650 + 12.12210I$	0
$u = -0.69533 - 1.35551I$ $a = -1.115150 + 0.202740I$ $b = -2.11433 + 0.55269I$	$1.45650 - 12.12210I$	0
$u = \;\; 0.20084 + 1.51437I$ $a = -1.083660 + 0.427485I$ $b = -1.88224 + 0.54463I$	$9.43138 - 2.34122I$	0
$u = \;\; 0.20084 - 1.51437I$ $a = -1.083660 - 0.427485I$ $b = -1.88224 - 0.54463I$	$9.43138 + 2.34122I$	0
$u = -0.51519 + 1.44160I$ $a = \;\; 1.189150 + 0.430508I$ $b = \;\; 2.06507 + 0.51343I$	$8.12807 + 8.74738I$	0
$u = -0.51519 - 1.44160I$ $a = \;\; 1.189150 - 0.430508I$ $b = \;\; 2.06507 - 0.51343I$	$8.12807 - 8.74738I$	0
$u = -0.67286 + 1.43031I$ $a = -0.721546 + 0.163020I$ $b = -1.261450 + 0.117391I$	$7.12915 + 3.60494I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.67286 - 1.43031I$ $a = -0.721546 - 0.163020I$ $b = -1.261450 - 0.117391I$	$7.12915 - 3.60494I$	0
$u = 0.83986 + 1.36381I$ $a = 0.709212 - 0.012362I$ $b = 1.255120 - 0.185897I$	$4.36978 - 10.04380I$	0
$u = 0.83986 - 1.36381I$ $a = 0.709212 + 0.012362I$ $b = 1.255120 + 0.185897I$	$4.36978 + 10.04380I$	0
$u = -0.76822 + 1.41143I$ $a = 1.028460 + 0.202507I$ $b = 2.16194 + 0.54337I$	$3.7759 + 18.1504I$	0
$u = -0.76822 - 1.41143I$ $a = 1.028460 - 0.202507I$ $b = 2.16194 - 0.54337I$	$3.7759 - 18.1504I$	0
$u = 0.56721 + 1.54481I$ $a = -0.932269 + 0.216487I$ $b = -1.99467 + 0.56349I$	$6.15588 - 11.53790I$	0
$u = 0.56721 - 1.54481I$ $a = -0.932269 - 0.216487I$ $b = -1.99467 - 0.56349I$	$6.15588 + 11.53790I$	0
$u = -1.64677 + 0.04569I$ $a = -0.075386 - 0.147225I$ $b = 0.0593377 + 0.1023010I$	$-8.84126 + 1.96210I$	0
$u = -1.64677 - 0.04569I$ $a = -0.075386 + 0.147225I$ $b = 0.0593377 - 0.1023010I$	$-8.84126 - 1.96210I$	0
$u = 0.49039 + 1.61919I$ $a = 0.600613 - 0.046493I$ $b = 1.53138 - 0.09575I$	$6.55517 - 3.11546I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.49039 - 1.61919I$ $a = 0.600613 + 0.046493I$ $b = 1.53138 + 0.09575I$	$6.55517 + 3.11546I$	0
$u = 0.225615 + 0.193490I$ $a = 1.41404 + 1.72695I$ $b = 0.573669 - 1.131970I$	$-0.60683 - 2.35987I$	$-1.70647 + 4.72969I$
$u = 0.225615 - 0.193490I$ $a = 1.41404 - 1.72695I$ $b = 0.573669 + 1.131970I$	$-0.60683 + 2.35987I$	$-1.70647 - 4.72969I$
$u = -0.22938 + 1.72989I$ $a = -0.626650 + 0.057918I$ $b = -1.50572 + 0.17267I$	$7.76106 - 3.97762I$	0
$u = -0.22938 - 1.72989I$ $a = -0.626650 - 0.057918I$ $b = -1.50572 - 0.17267I$	$7.76106 + 3.97762I$	0

II. $I_2^u = \langle b^2 - 2bu - 3b + 8u + 13,\ a,\ u^2 + u - 1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u+1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ b \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ b \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ -bu - 2b + 6u + 8 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -2u+1 \\ b - 3u - 2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u \\ u-1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 2u-1 \\ u-1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -8bu + 5b \\ -5bu + 4b \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -92bu + 67b - 21u - 44$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$(y^2 - 7y + 1)^2$
c_2, c_3, c_4 c_7	$(y^2 - 3y + 1)^2$
c_5, c_6	$y^4 + 7y^3 + 48y^2 + 7y + 1$
c_9, c_{11}, c_{12}	$(y^2 + y + 1)^2$
c_{10}	y^4

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.618034$ $a = 0$ $b = 2.11803 + 3.66854I$	$-0.98696 + 2.02988I$	$-35.5000 + 37.2022I$
$u = 0.618034$ $a = 0$ $b = 2.11803 - 3.66854I$	$-0.98696 - 2.02988I$	$-35.5000 - 37.2022I$
$u = -1.61803$ $a = 0$ $b = -0.118034 + 0.204441I$	$-8.88264 - 2.02988I$	$-35.5000 + 44.1304I$
$u = -1.61803$ $a = 0$ $b = -0.118034 - 0.204441I$	$-8.88264 + 2.02988I$	$-35.5000 - 44.1304I$

III. $\boldsymbol{I_1^v = \langle a,\ -1.17\times 10^5 v^8 - 1.01\times 10^5 v^7 + \cdots + 1.78\times 10^5 b - 2.14\times 10^5,\ v^9 + v^8 + \cdots + 5v + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ 0.657233v^8 + 0.567767v^7 + \cdots + 9.16478v + 1.20024 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.0241374v^8 - 0.0627123v^7 + \cdots + 0.209905v - 0.0894654 \\ 0.657233v^8 + 0.567767v^7 + \cdots + 9.16478v + 1.20024 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} v \\ 0.275340v^8 - 0.0465346v^7 + \cdots + 1.55676v - 0.961481 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.177685v^8 + 0.143932v^7 + \cdots + 2.33403v + 0.321875 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.177685v^8 + 0.143932v^7 + \cdots + 2.33403v + 0.321875 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.177685v^8 - 0.143932v^7 + \cdots - 2.33403v + 0.678125 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.177685v^8 - 0.143932v^7 + \cdots - 2.33403v - 0.321875 \\ -1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.0347129v^8 - 0.0223692v^7 + \cdots - 0.0767568v + 0.422617 \\ 0.355369v^8 + 0.287863v^7 + \cdots + 4.66807v - 0.356251 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{423971}{178147}v^8 + \frac{364904}{178147}v^7 + \frac{4951441}{178147}v^6 + \frac{2188309}{178147}v^5 + \frac{14403862}{178147}v^4 - \frac{3007434}{178147}v^3 - \frac{2178758}{178147}v^2 + \frac{4762398}{178147}v - \frac{397589}{178147}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^9$
c_3, c_7	u^9
c_4	$(u+1)^9$
c_5, c_{11}	$u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1$
c_6	$u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1$
c_8	$u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1$
c_9	$u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1$
c_{10}	$u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1$
c_{12}	$u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^9$
c_3, c_7	y^9
c_5, c_{11}	$y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1$
c_6, c_{10}	$y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1$
c_8	$y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1$
c_9, c_{12}	$y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 0.508863 + 0.531649I$ $a = 0$ $b = -0.225230 + 1.238240I$	$0.13850 + 2.09337I$	$-7.58955 - 5.46639I$
$v = 0.508863 - 0.531649I$ $a = 0$ $b = -0.225230 - 1.238240I$	$0.13850 - 2.09337I$	$-7.58955 + 5.46639I$
$v = -0.465349$ $a = 0$ $b = -1.77487$	-2.84338	-11.8180
$v = -0.234017 + 0.220643I$ $a = 0$ $b = -1.25758 + 1.97504I$	$-2.26187 + 2.45442I$	$-9.75362 + 6.63381I$
$v = -0.234017 - 0.220643I$ $a = 0$ $b = -1.25758 - 1.97504I$	$-2.26187 - 2.45442I$	$-9.75362 - 6.63381I$
$v = -0.65490 + 2.25183I$ $a = 0$ $b = -0.300113 - 0.434032I$	$-6.01628 + 1.33617I$	$-20.0794 - 3.5537I$
$v = -0.65490 - 2.25183I$ $a = 0$ $b = -0.300113 + 0.434032I$	$-6.01628 - 1.33617I$	$-20.0794 + 3.5537I$
$v = 0.11273 + 2.63847I$ $a = 0$ $b = 0.170352 + 0.451655I$	$-5.24306 + 7.08493I$	$-20.6685 - 5.3307I$
$v = 0.11273 - 2.63847I$ $a = 0$ $b = 0.170352 - 0.451655I$	$-5.24306 - 7.08493I$	$-20.6685 + 5.3307I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^2-3u+1)^2(u^{85}+38u^{84}+\cdots-213u+1)$
c_2	$((u-1)^9)(u^2+u-1)^2(u^{85}-12u^{84}+\cdots-u+1)$
c_3	$u^9(u^2+u-1)^2(u^{85}-3u^{84}+\cdots+2560u+512)$
c_4	$((u+1)^9)(u^2-u-1)^2(u^{85}-12u^{84}+\cdots-u+1)$
c_5	$(u^4-3u^3+8u^2-3u+1)$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{85}+3u^{84}+\cdots+112806u+16279)$
c_6	$(u^4-3u^3+8u^2-3u+1)(u^9+u^8+\cdots-u-1)$ $\cdot(u^{85}-u^{84}+\cdots+28266u+22877)$
c_7	$u^9(u^2-u-1)^2(u^{85}-3u^{84}+\cdots+2560u+512)$
c_8	$((u^2+3u+1)^2)(u^9+5u^8+\cdots+u+1)$ $\cdot(u^{85}-4u^{84}+\cdots-5u+1)$
c_9	$(u^2-u+1)^2(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)$ $\cdot(u^{85}-4u^{84}+\cdots+7u+1)$
c_{10}	$u^4(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)$ $\cdot(u^{85}-8u^{84}+\cdots+192u+16)$
c_{11}	$(u^2+u+1)^2$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{85}-38u^{84}+\cdots+27u+1)$
c_{12}	$(u^2+u+1)^2(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)$ $\cdot(u^{85}-4u^{84}+\cdots+7u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^2-7y+1)^2(y^{85}+30y^{84}+\cdots+27491y-1)$
c_2, c_4	$((y-1)^9)(y^2-3y+1)^2(y^{85}-38y^{84}+\cdots-213y-1)$
c_3, c_7	$y^9(y^2-3y+1)^2(y^{85}+51y^{84}+\cdots-3932160y-262144)$
c_5	$(y^4+7y^3+48y^2+7y+1)$ $\cdot(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)$ $\cdot(y^{85}-81y^{84}+\cdots+5075593862y-265005841)$
c_6	$(y^4+7y^3+48y^2+7y+1)$ $\cdot(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{85}-57y^{84}+\cdots-21266860578y-523357129)$
c_8	$(y^2-7y+1)^2(y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1)$ $\cdot(y^{85}-22y^{84}+\cdots+31y-1)$
c_9, c_{12}	$(y^2+y+1)^2$ $\cdot(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot(y^{85}+38y^{84}+\cdots+27y-1)$
c_{10}	$y^4(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{85}+20y^{84}+\cdots+12160y-256)$
c_{11}	$((y^2+y+1)^2)(y^9+7y^8+\cdots+13y-1)$ $\cdot(y^{85}+22y^{84}+\cdots+1735y-1)$