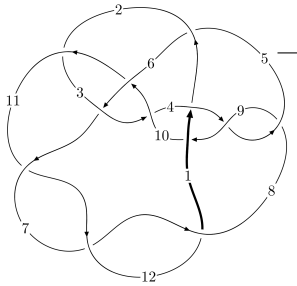
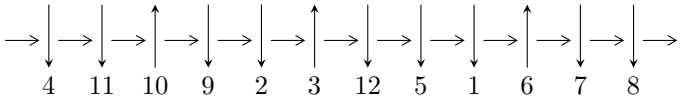
$12a_{1207}$ $(K12a_{1207})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 9.69782 \times 10^{536} u^{139} - 2.25657 \times 10^{536} u^{138} + \cdots + 6.06990 \times 10^{539} b + 5.03879 \times 10^{539}, \\ & 2.09110 \times 10^{539} u^{139} - 1.68892 \times 10^{539} u^{138} + \cdots + 5.15941 \times 10^{541} a - 1.14839 \times 10^{541}, \\ & u^{140} - u^{139} + \cdots + 1003u - 289 \rangle \\ I_2^u = \langle & -186986226 u^{33} + 327109657 u^{32} + \cdots + 86350699 b - 1171458903, \\ & 1805845965 u^{33} - 920160738 u^{32} + \cdots + 86350699 a + 6335297871,\ u^{34} - 22 u^{32} + \cdots + 10u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 174 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. $\boldsymbol{I_1^u = \langle 9.70 \times 10^{536} u^{139} - 2.26 \times 10^{536} u^{138} + \cdots + 6.07 \times 10^{539} b + 5.04 \times 10^{539},\ 2.09 \times 10^{539} u^{139} - 1.69 \times 10^{539} u^{138} + \cdots + 5.16 \times 10^{541} a - 1.15 \times 10^{541},\ u^{140} - u^{139} + \cdots + 1003u - 289 \rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.00405297u^{139} + 0.00327347u^{138} + \cdots + 3.21409u + 0.222581 \\ -0.00159769u^{139} + 0.000371764u^{138} + \cdots + 2.12271u - 0.830128 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.00565066u^{139} + 0.00364523u^{138} + \cdots + 5.33680u - 0.607546 \\ -0.00159769u^{139} + 0.000371764u^{138} + \cdots + 2.12271u - 0.830128 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.00200581u^{139} + 0.00496507u^{138} + \cdots - 6.08461u + 3.72627 \\ -0.000810012u^{139} + 0.000938180u^{138} + \cdots + 0.913658u + 0.556043 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.00402005u^{139} - 0.00217381u^{138} + \cdots - 5.07444u + 0.659975 \\ 0.000571152u^{139} - 0.00100493u^{138} + \cdots - 0.805524u + 0.766408 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.00270227u^{139} - 0.00279415u^{138} + \cdots - 1.21625u + 4.64222 \\ -0.00228002u^{139} + 0.00212213u^{138} + \cdots + 3.56568u - 0.996732 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.00489730u^{139} - 0.00549964u^{138} + \cdots - 8.88933u + 3.90747 \\ 0.0000696783u^{139} - 0.00146228u^{138} + \cdots + 1.57653u + 0.256233 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.00261727u^{139} - 0.00177802u^{138} + \cdots - 0.497087u + 4.05204 \\ -0.00181158u^{139} + 0.00219701u^{138} + \cdots + 2.86224u - 0.820622 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.0120913u^{139} + 0.00925037u^{138} + \cdots - 5.95755u - 14.8088$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{140} + 4u^{139} + \cdots - 9u + 1$
c_2	$u^{140} - 2u^{139} + \cdots + 333381u - 48473$
c_3	$u^{140} - 2u^{139} + \cdots - 41435571198u - 5037373313$
c_4, c_8	$u^{140} + 41u^{138} + \cdots - 3278u - 326$
c_5	$u^{140} - 36u^{138} + \cdots + 1736923383u + 361950067$
c_6	$u^{140} - 8u^{139} + \cdots + 106962u + 10082$
c_7, c_{11}, c_{12}	$u^{140} - u^{139} + \cdots + 1003u - 289$
c_9	$u^{140} - u^{139} + \cdots + 31u - 211$
c_{10}	$u^{140} + 3u^{139} + \cdots + 14u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{140} + 10y^{139} + \cdots + 27y + 1$
c_2	$y^{140} - 40y^{139} + \cdots - 91720535629y + 2349631729$
c_3	$y^{140} + 84y^{139} + \cdots + 9.52 \times 10^{20}y + 2.54 \times 10^{19}$
c_4, c_8	$y^{140} + 82y^{139} + \cdots + 3039300y + 106276$
c_5	$y^{140} - 72y^{139} + \cdots - 3.85 \times 10^{18}y + 1.31 \times 10^{17}$
c_6	$y^{140} + 50y^{139} + \cdots - 13461745852y + 101646724$
c_7, c_{11}, c_{12}	$y^{140} - 159y^{139} + \cdots - 199121y + 83521$
c_9	$y^{140} - 17y^{139} + \cdots - 3596401y + 44521$
c_{10}	$y^{140} + 11y^{139} + \cdots + 18y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.664700+0.764460I$ $a=\ \ 0.786549-0.391919I$ $b=-0.777311-0.272732I$	$-4.21163+0.44946I$	0
$u=-0.664700-0.764460I$ $a=\ \ 0.786549+0.391919I$ $b=-0.777311+0.272732I$	$-4.21163-0.44946I$	0
$u=\ \ 0.723613+0.663890I$ $a=\ \ 0.100235+1.407650I$ $b=-1.098430-0.770465I$	$-4.29384-9.41106I$	0
$u=\ \ 0.723613-0.663890I$ $a=\ \ 0.100235-1.407650I$ $b=-1.098430+0.770465I$	$-4.29384+9.41106I$	0
$u=-0.875504+0.391347I$ $a=-0.694523+0.387506I$ $b=\ \ 0.785277+0.019643I$	$-1.105740-0.505263I$	0
$u=-0.875504-0.391347I$ $a=-0.694523-0.387506I$ $b=\ \ 0.785277-0.019643I$	$-1.105740+0.505263I$	0
$u=-0.733482+0.494442I$ $a=\ \ 1.337570-0.211604I$ $b=-0.097656-0.212794I$	$1.98403-3.21396I$	0
$u=-0.733482-0.494442I$ $a=\ \ 1.337570+0.211604I$ $b=-0.097656+0.212794I$	$1.98403+3.21396I$	0
$u=\ \ 1.061780+0.419066I$ $a=-0.466473-0.043502I$ $b=\ \ 0.186946-0.630288I$	$2.41235-5.18322I$	0
$u=\ \ 1.061780-0.419066I$ $a=-0.466473+0.043502I$ $b=\ \ 0.186946+0.630288I$	$2.41235+5.18322I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.842849+0.091369I$ $a=-0.389431-0.059980I$ $b=\ \ 0.589549+0.329056I$	$-0.971976+0.163551I$	0
$u=-0.842849-0.091369I$ $a=-0.389431+0.059980I$ $b=\ \ 0.589549-0.329056I$	$-0.971976-0.163551I$	0
$u=\ \ 0.797009+0.237221I$ $a=\ \ 0.61591-1.60801I$ $b=\ \ 0.841277+0.591255I$	$-1.00052-4.05079I$	0
$u=\ \ 0.797009-0.237221I$ $a=\ \ 0.61591+1.60801I$ $b=\ \ 0.841277-0.591255I$	$-1.00052+4.05079I$	0
$u=-0.695414+0.416816I$ $a=\ \ 0.415690-1.231430I$ $b=\ \ 0.747231+1.026780I$	$-0.84448-4.06575I$	0
$u=-0.695414-0.416816I$ $a=\ \ 0.415690+1.231430I$ $b=\ \ 0.747231-1.026780I$	$-0.84448+4.06575I$	0
$u=-0.784025+0.909426I$ $a=\ \ 0.199354-1.141200I$ $b=-1.039980+0.900244I$	$-0.7502+14.8929I$	0
$u=-0.784025-0.909426I$ $a=\ \ 0.199354+1.141200I$ $b=-1.039980-0.900244I$	$-0.7502-14.8929I$	0
$u=-0.427709+1.129230I$ $a=-0.486121+0.803738I$ $b=\ \ 0.917993-0.745761I$	$-2.94428+5.11499I$	0
$u=-0.427709-1.129230I$ $a=-0.486121-0.803738I$ $b=\ \ 0.917993+0.745761I$	$-2.94428-5.11499I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.110880 + 0.770452I$ $a = -1.176030 + 0.513815I$ $b = 0.959095 - 0.550578I$	$-2.67355 + 4.62927I$	0
$u = 0.110880 - 0.770452I$ $a = -1.176030 - 0.513815I$ $b = 0.959095 + 0.550578I$	$-2.67355 - 4.62927I$	0
$u = 0.579144 + 0.513632I$ $a = -0.502537 - 0.140677I$ $b = 0.652717 - 0.875480I$	$3.12611 + 4.01064I$	0
$u = 0.579144 - 0.513632I$ $a = -0.502537 + 0.140677I$ $b = 0.652717 + 0.875480I$	$3.12611 - 4.01064I$	0
$u = 0.662666 + 0.391153I$ $a = -0.14133 - 1.72463I$ $b = 0.994817 + 0.972515I$	$-1.03835 - 6.46385I$	0
$u = 0.662666 - 0.391153I$ $a = -0.14133 + 1.72463I$ $b = 0.994817 - 0.972515I$	$-1.03835 + 6.46385I$	0
$u = 0.703698 + 0.296351I$ $a = 1.69296 + 0.67637I$ $b = 1.023900 - 0.024241I$	$-1.23542 + 4.69462I$	0
$u = 0.703698 - 0.296351I$ $a = 1.69296 - 0.67637I$ $b = 1.023900 + 0.024241I$	$-1.23542 - 4.69462I$	0
$u = -1.169030 + 0.406222I$ $a = 0.374439 + 0.919876I$ $b = 1.01034 - 0.99123I$	$1.69637 + 3.05376I$	0
$u = -1.169030 - 0.406222I$ $a = 0.374439 - 0.919876I$ $b = 1.01034 + 0.99123I$	$1.69637 - 3.05376I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.055131 + 0.760060I$ $a = 0.654166 + 1.059530I$ $b = -0.564034 - 0.881275I$	$5.41822 + 1.05469I$	0
$u = 0.055131 - 0.760060I$ $a = 0.654166 - 1.059530I$ $b = -0.564034 + 0.881275I$	$5.41822 - 1.05469I$	0
$u = 0.512374 + 0.531816I$ $a = -0.124478 + 1.229360I$ $b = -1.19410 - 0.93878I$	$3.24255 - 7.63630I$	0
$u = 0.512374 - 0.531816I$ $a = -0.124478 - 1.229360I$ $b = -1.19410 + 0.93878I$	$3.24255 + 7.63630I$	0
$u = -0.668082 + 0.296672I$ $a = -0.319331 + 0.795469I$ $b = 0.962171 - 0.600319I$	$-1.87716 + 0.12463I$	0
$u = -0.668082 - 0.296672I$ $a = -0.319331 - 0.795469I$ $b = 0.962171 + 0.600319I$	$-1.87716 - 0.12463I$	0
$u = 0.574185 + 0.440435I$ $a = 0.971814 - 0.681398I$ $b = 0.036914 + 0.599146I$	$2.57035 - 1.43023I$	0
$u = 0.574185 - 0.440435I$ $a = 0.971814 + 0.681398I$ $b = 0.036914 - 0.599146I$	$2.57035 + 1.43023I$	0
$u = 0.462670 + 0.554740I$ $a = 0.28947 - 1.44217I$ $b = 0.268987 + 0.813665I$	$2.90772 - 2.18120I$	0
$u = 0.462670 - 0.554740I$ $a = 0.28947 + 1.44217I$ $b = 0.268987 - 0.813665I$	$2.90772 + 2.18120I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.325781+0.637531I$ $a=\ \ 0.73161-1.30044I$ $b=-0.646866+0.111992I$	$-0.28044+3.17028I$	0
$u=-0.325781-0.637531I$ $a=\ \ 0.73161+1.30044I$ $b=-0.646866-0.111992I$	$-0.28044-3.17028I$	0
$u=\ \ 0.633748+1.166710I$ $a=\ \ 0.586035+0.085599I$ $b=-0.750696+0.232676I$	$-0.87696-5.20914I$	0
$u=\ \ 0.633748-1.166710I$ $a=\ \ 0.586035-0.085599I$ $b=-0.750696-0.232676I$	$-0.87696+5.20914I$	0
$u=\ \ 0.915236+0.974210I$ $a=-0.129646-0.943460I$ $b=\ \ 0.966530+0.747208I$	$-1.83283-2.03560I$	0
$u=\ \ 0.915236-0.974210I$ $a=-0.129646+0.943460I$ $b=\ \ 0.966530-0.747208I$	$-1.83283+2.03560I$	0
$u=-0.397448+0.491112I$ $a=-2.64127-0.55813I$ $b=-0.472527+0.413037I$	$0.04254+7.33492I$	$-9.9382-14.3032I$
$u=-0.397448-0.491112I$ $a=-2.64127+0.55813I$ $b=-0.472527-0.413037I$	$0.04254-7.33492I$	$-9.9382+14.3032I$
$u=-0.459772+1.299100I$ $a=-0.634517-0.229659I$ $b=\ \ 0.684407+0.575593I$	$0.44709-7.98394I$	0
$u=-0.459772-1.299100I$ $a=-0.634517+0.229659I$ $b=\ \ 0.684407-0.575593I$	$0.44709+7.98394I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.439314 + 0.438525I$ $a = -0.260113 - 1.107590I$ $b = -1.19873 + 1.08257I$	$-0.48464 - 7.47319I$	$-11.6774 + 11.9215I$
$u = 0.439314 - 0.438525I$ $a = -0.260113 + 1.107590I$ $b = -1.19873 - 1.08257I$	$-0.48464 + 7.47319I$	$-11.6774 - 11.9215I$
$u = -0.396768 + 0.443070I$ $a = -0.89644 + 2.45471I$ $b = 0.375721 - 0.782823I$	$2.98407 + 6.46449I$	$0.34509 - 10.66849I$
$u = -0.396768 - 0.443070I$ $a = -0.89644 - 2.45471I$ $b = 0.375721 + 0.782823I$	$2.98407 - 6.46449I$	$0.34509 + 10.66849I$
$u = -0.191276 + 0.560807I$ $a = 1.38693 - 1.88511I$ $b = -0.847157 + 0.495383I$	$0.99488 + 4.11864I$	$6.68742 - 8.04172I$
$u = -0.191276 - 0.560807I$ $a = 1.38693 + 1.88511I$ $b = -0.847157 - 0.495383I$	$0.99488 - 4.11864I$	$6.68742 + 8.04172I$
$u = -0.512094 + 0.288469I$ $a = 0.201018 + 0.891256I$ $b = -0.70226 - 1.39420I$	$-2.57763 + 2.49455I$	$-13.1614 - 11.8667I$
$u = -0.512094 - 0.288469I$ $a = 0.201018 - 0.891256I$ $b = -0.70226 + 1.39420I$	$-2.57763 - 2.49455I$	$-13.1614 + 11.8667I$
$u = 0.312147 + 0.473730I$ $a = -0.851897 - 0.627104I$ $b = 0.992979 + 0.845993I$	$-1.64722 - 2.64192I$	$-6.75968 + 7.82828I$
$u = 0.312147 - 0.473730I$ $a = -0.851897 + 0.627104I$ $b = 0.992979 - 0.845993I$	$-1.64722 + 2.64192I$	$-6.75968 - 7.82828I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.564449$ $a=\ \ 0.133288$ $b=\ \ 0.672795$	-0.962744	-10.1490
$u=-1.43044+0.15138I$ $a=-0.115764+0.526391I$ $b=\ \ 0.782330-0.869276I$	$-3.57102-0.35621I$	0
$u=-1.43044-0.15138I$ $a=-0.115764-0.526391I$ $b=\ \ 0.782330+0.869276I$	$-3.57102+0.35621I$	0
$u=\ \ 1.45865+0.11674I$ $a=\ \ 0.64936-1.26547I$ $b=\ \ 1.006320+0.697960I$	$-4.44443-6.18107I$	0
$u=\ \ 1.45865-0.11674I$ $a=\ \ 0.64936+1.26547I$ $b=\ \ 1.006320-0.697960I$	$-4.44443+6.18107I$	0
$u=\ \ 1.46459+0.13353I$ $a=-1.213010-0.673295I$ $b=-0.792738+0.117029I$	$-7.91264-1.67664I$	0
$u=\ \ 1.46459-0.13353I$ $a=-1.213010+0.673295I$ $b=-0.792738-0.117029I$	$-7.91264+1.67664I$	0
$u=-1.47219+0.12110I$ $a=-0.231901+0.522863I$ $b=-1.54570-1.57835I$	$-8.19313+0.75936I$	0
$u=-1.47219-0.12110I$ $a=-0.231901-0.522863I$ $b=-1.54570+1.57835I$	$-8.19313-0.75936I$	0
$u=-1.48733+0.03501I$ $a=\ \ 0.322703+0.980063I$ $b=\ \ 0.724917-0.201965I$	$-5.89372-3.44747I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.48733-0.03501I$ $a=\ \ 0.322703-0.980063I$ $b=\ \ 0.724917+0.201965I$	$-5.89372+3.44747I$	0
$u=\ \ 1.48781+0.05381I$ $a=\ \ 0.752448-0.618143I$ $b=\ \ 1.59477+0.64458I$	$-4.93916-2.78367I$	0
$u=\ \ 1.48781-0.05381I$ $a=\ \ 0.752448+0.618143I$ $b=\ \ 1.59477-0.64458I$	$-4.93916+2.78367I$	0
$u=\ \ 0.503828+0.073523I$ $a=-2.44089-2.01714I$ $b=-0.545407-0.128755I$	$-3.64336-1.92912I$	$-22.2195+4.5913I$
$u=\ \ 0.503828-0.073523I$ $a=-2.44089+2.01714I$ $b=-0.545407+0.128755I$	$-3.64336+1.92912I$	$-22.2195-4.5913I$
$u=-1.48908+0.12089I$ $a=-0.060076-0.562281I$ $b=-1.302230+0.127007I$	$-8.02860-2.49175I$	0
$u=-1.48908-0.12089I$ $a=-0.060076+0.562281I$ $b=-1.302230-0.127007I$	$-8.02860+2.49175I$	0
$u=\ \ 1.47894+0.21321I$ $a=-0.658120+0.409281I$ $b=-0.755694+0.115306I$	$-5.65381-0.48158I$	0
$u=\ \ 1.47894-0.21321I$ $a=-0.658120-0.409281I$ $b=-0.755694-0.115306I$	$-5.65381+0.48158I$	0
$u=\ \ 1.49203+0.08952I$ $a=-0.427255+0.881362I$ $b=-1.48446-1.13266I$	$-8.45812-5.96609I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.49203 - 0.08952I$ $a = -0.427255 - 0.881362I$ $b = -1.48446 + 1.13266I$	$-8.45812 + 5.96609I$	0
$u = 1.48826 + 0.17864I$ $a = 0.535093 - 1.113330I$ $b = 0.823116 + 0.394357I$	$-6.31084 - 5.99967I$	0
$u = 1.48826 - 0.17864I$ $a = 0.535093 + 1.113330I$ $b = 0.823116 - 0.394357I$	$-6.31084 + 5.99967I$	0
$u = -0.335044 + 0.367577I$ $a = 2.03708 + 0.63434I$ $b = 0.726011 - 0.525189I$	$-2.09120 - 0.13055I$	$-11.23045 - 3.27237I$
$u = -0.335044 - 0.367577I$ $a = 2.03708 - 0.63434I$ $b = 0.726011 + 0.525189I$	$-2.09120 + 0.13055I$	$-11.23045 + 3.27237I$
$u = 1.50933 + 0.13545I$ $a = 1.61865 + 0.68437I$ $b = 0.541875 - 0.007146I$	$-6.33975 - 9.50478I$	0
$u = 1.50933 - 0.13545I$ $a = 1.61865 - 0.68437I$ $b = 0.541875 + 0.007146I$	$-6.33975 + 9.50478I$	0
$u = -1.51497 + 0.13006I$ $a = -0.185483 - 0.538002I$ $b = -1.68824 + 1.32651I$	$-7.94331 + 4.70663I$	0
$u = -1.51497 - 0.13006I$ $a = -0.185483 + 0.538002I$ $b = -1.68824 - 1.32651I$	$-7.94331 - 4.70663I$	0
$u = 1.52067 + 0.11940I$ $a = -0.289867 + 1.292590I$ $b = -0.475269 - 1.136580I$	$-3.51038 - 8.39205I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.52067 - 0.11940I$ $a = -0.289867 - 1.292590I$ $b = -0.475269 + 1.136580I$	$-3.51038 + 8.39205I$	0
$u = -1.51859 + 0.15663I$ $a = -0.527020 - 0.806732I$ $b = -0.554889 + 0.927513I$	$-3.66738 + 4.69280I$	0
$u = -1.51859 - 0.15663I$ $a = -0.527020 + 0.806732I$ $b = -0.554889 - 0.927513I$	$-3.66738 - 4.69280I$	0
$u = 1.52841$ $a = -0.713515$ $b = -1.27813$	-7.81776	0
$u = -1.53279 + 0.01394I$ $a = 1.14809 - 1.21363I$ $b = 0.620121 + 0.251284I$	$-10.52960 + 2.20106I$	0
$u = -1.53279 - 0.01394I$ $a = 1.14809 + 1.21363I$ $b = 0.620121 - 0.251284I$	$-10.52960 - 2.20106I$	0
$u = -1.52839 + 0.12828I$ $a = 0.081023 - 0.416786I$ $b = 1.48690 + 1.88540I$	$-7.13324 + 9.48597I$	0
$u = -1.52839 - 0.12828I$ $a = 0.081023 + 0.416786I$ $b = 1.48690 - 1.88540I$	$-7.13324 - 9.48597I$	0
$u = 1.54665 + 0.05449I$ $a = 0.009875 + 0.380881I$ $b = 0.95023 - 2.11525I$	$-9.57912 - 3.58725I$	0
$u = 1.54665 - 0.05449I$ $a = 0.009875 - 0.380881I$ $b = 0.95023 + 2.11525I$	$-9.57912 + 3.58725I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.54101+0.15944I$ $a=\ \ 0.564425+0.524302I$ $b=\ \ 1.75708-0.92401I$	$-3.63309+10.12680I$	0
$u=-1.54101-0.15944I$ $a=\ \ 0.564425-0.524302I$ $b=\ \ 1.75708+0.92401I$	$-3.63309-10.12680I$	0
$u=-1.56856+0.00769I$ $a=-0.87398+1.15965I$ $b=-0.719647-0.558022I$	$-9.07794-4.17420I$	0
$u=-1.56856-0.00769I$ $a=-0.87398-1.15965I$ $b=-0.719647+0.558022I$	$-9.07794+4.17420I$	0
$u=-1.57737+0.02561I$ $a=-0.621805-0.176074I$ $b=-0.638593-0.178351I$	$-5.01387-2.33379I$	0
$u=-1.57737-0.02561I$ $a=-0.621805+0.176074I$ $b=-0.638593+0.178351I$	$-5.01387+2.33379I$	0
$u=-0.108930+0.404335I$ $a=-1.95782+1.65702I$ $b=\ \ 1.168180-0.645412I$	$-2.66601+4.44912I$	$-15.4555-3.5906I$
$u=-0.108930-0.404335I$ $a=-1.95782-1.65702I$ $b=\ \ 1.168180+0.645412I$	$-2.66601-4.44912I$	$-15.4555+3.5906I$
$u=\ \ 1.59026+0.06498I$ $a=-0.177485+0.499893I$ $b=-1.46257-1.12144I$	$-9.55332-1.37380I$	0
$u=\ \ 1.59026-0.06498I$ $a=-0.177485-0.499893I$ $b=-1.46257+1.12144I$	$-9.55332+1.37380I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.59423+0.11837I$ $a=-0.352989-0.889997I$ $b=-1.32213+1.32352I$	$-8.72906+8.38051I$	0
$u=-1.59423-0.11837I$ $a=-0.352989+0.889997I$ $b=-1.32213-1.32352I$	$-8.72906-8.38051I$	0
$u=-1.60372+0.21478I$ $a=\ \ 0.513235+0.943608I$ $b=\ \ 1.32832-0.91986I$	$-12.0451+12.7341I$	0
$u=-1.60372-0.21478I$ $a=\ \ 0.513235-0.943608I$ $b=\ \ 1.32832+0.91986I$	$-12.0451-12.7341I$	0
$u=\ \ 1.61829+0.08905I$ $a=-0.115496+0.480212I$ $b=-1.201190-0.645880I$	$-9.46916-1.00537I$	0
$u=\ \ 1.61829-0.08905I$ $a=-0.115496-0.480212I$ $b=-1.201190+0.645880I$	$-9.46916+1.00537I$	0
$u=\ \ 1.62968+0.05452I$ $a=-0.230254-0.511771I$ $b=-1.31338+1.55457I$	$-9.05093+2.51533I$	0
$u=\ \ 1.62968-0.05452I$ $a=-0.230254+0.511771I$ $b=-1.31338-1.55457I$	$-9.05093-2.51533I$	0
$u=\ \ 1.61209+0.25281I$ $a=\ \ 0.008322-0.664491I$ $b=\ \ 0.931965+0.237653I$	$-11.78290-4.33530I$	0
$u=\ \ 1.61209-0.25281I$ $a=\ \ 0.008322+0.664491I$ $b=\ \ 0.931965-0.237653I$	$-11.78290+4.33530I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.300912 + 0.205547I$ $a = 2.41558 + 2.51152I$ $b = -0.669129 + 0.407572I$	$0.23225 + 4.08304I$	$-16.4105 - 4.0590I$
$u = 0.300912 - 0.205547I$ $a = 2.41558 - 2.51152I$ $b = -0.669129 - 0.407572I$	$0.23225 - 4.08304I$	$-16.4105 + 4.0590I$
$u = 0.199111 + 0.298771I$ $a = 1.22881 + 1.87046I$ $b = 0.890082 - 0.895262I$	$-2.54694 + 0.86537I$	$-12.46402 + 5.98089I$
$u = 0.199111 - 0.298771I$ $a = 1.22881 - 1.87046I$ $b = 0.890082 + 0.895262I$	$-2.54694 - 0.86537I$	$-12.46402 - 5.98089I$
$u = 1.61375 + 0.36334I$ $a = -0.368619 + 0.873433I$ $b = -1.33880 - 0.95632I$	$-9.8237 - 10.4986I$	0
$u = 1.61375 - 0.36334I$ $a = -0.368619 - 0.873433I$ $b = -1.33880 + 0.95632I$	$-9.8237 + 10.4986I$	0
$u = 1.64173 + 0.29194I$ $a = 0.429051 - 0.914569I$ $b = 1.34940 + 1.02524I$	$-8.7098 - 19.4012I$	0
$u = 1.64173 - 0.29194I$ $a = 0.429051 + 0.914569I$ $b = 1.34940 - 1.02524I$	$-8.7098 + 19.4012I$	0
$u = -0.187115 + 0.267019I$ $a = 0.21996 - 3.10938I$ $b = -1.014640 + 0.389268I$	$0.93632 + 1.85529I$	$1.08312 - 2.65422I$
$u = -0.187115 - 0.267019I$ $a = 0.21996 + 3.10938I$ $b = -1.014640 - 0.389268I$	$0.93632 - 1.85529I$	$1.08312 + 2.65422I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.076035 + 0.309971I$ $a = 2.55660 - 1.68509I$ $b = -0.708724 + 0.256940I$	$1.01016 + 1.78617I$	$-0.59593 - 2.45671I$
$u = 0.076035 - 0.309971I$ $a = 2.55660 + 1.68509I$ $b = -0.708724 - 0.256940I$	$1.01016 - 1.78617I$	$-0.59593 + 2.45671I$
$u = -1.67758 + 0.21213I$ $a = -0.447388 - 0.880625I$ $b = -1.23909 + 0.92102I$	$-10.76140 + 6.29072I$	0
$u = -1.67758 - 0.21213I$ $a = -0.447388 + 0.880625I$ $b = -1.23909 - 0.92102I$	$-10.76140 - 6.29072I$	0
$u = -1.66320 + 0.34428I$ $a = 0.002532 + 0.582245I$ $b = 1.022320 - 0.244740I$	$-8.53641 + 10.73160I$	0
$u = -1.66320 - 0.34428I$ $a = 0.002532 - 0.582245I$ $b = 1.022320 + 0.244740I$	$-8.53641 - 10.73160I$	0
$u = -1.82968 + 0.54136I$ $a = 0.063321 - 0.344650I$ $b = -0.723983 + 0.035174I$	$-7.56867 + 2.29891I$	0
$u = -1.82968 - 0.54136I$ $a = 0.063321 + 0.344650I$ $b = -0.723983 - 0.035174I$	$-7.56867 - 2.29891I$	0
$u = 2.04595 + 0.16785I$ $a = -0.053376 + 0.312098I$ $b = -0.511875 - 0.170646I$	$-8.05626 + 0.26551I$	0
$u = 2.04595 - 0.16785I$ $a = -0.053376 - 0.312098I$ $b = -0.511875 + 0.170646I$	$-8.05626 - 0.26551I$	0

II.

$\boldsymbol{I_2^u = \langle -1.87\times 10^8 u^{33} + 3.27\times 10^8 u^{32} + \cdots + 8.64\times 10^7 b - 1.17\times 10^9,\ 1.81\times 10^9 u^{33} - 9.20\times 10^8 u^{32} + \cdots + 8.64\times 10^7 a + 6.34\times 10^9,\ u^{34} - 22u^{32} + \cdots + 10u + 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -20.9129u^{33} + 10.6561u^{32} + \cdots - 457.670u - 73.3671 \\ 2.16543u^{33} - 3.78815u^{32} + \cdots + 81.8945u + 13.5663 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -18.7475u^{33} + 6.86794u^{32} + \cdots - 375.776u - 59.8008 \\ 2.16543u^{33} - 3.78815u^{32} + \cdots + 81.8945u + 13.5663 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 5.06829u^{33} - 6.67284u^{32} + \cdots + 17.1786u - 2.50160 \\ 0.180126u^{33} - 3.86825u^{32} + \cdots - 97.1453u - 16.8136 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -8.79495u^{33} + 2.09806u^{32} + \cdots - 264.937u - 46.2246 \\ 2.94152u^{33} - 5.16362u^{32} + \cdots - 51.1550u - 8.71002 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 10.9766u^{33} + 2.51680u^{32} + \cdots + 310.285u + 52.7726 \\ -7.26168u^{33} + 9.08502u^{32} + \cdots - 79.8501u - 11.7365 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -16.9016u^{33} + 7.90644u^{32} + \cdots - 339.054u - 55.2055 \\ -0.163445u^{33} - 1.31578u^{32} + \cdots + 22.9550u + 4.29848 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.910329u^{33} + 11.9905u^{32} + \cdots + 194.865u + 35.1480 \\ -9.87884u^{33} + 11.0194u^{32} + \cdots - 95.8747u - 14.1151 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{2794613904}{86350699}u^{33} - \frac{2574155598}{86350699}u^{32} + \cdots + \frac{37461769996}{86350699}u + \frac{4272649106}{86350699}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{34} - 11u^{33} + \cdots - 2u + 1$
c_2	$u^{34} - 3u^{33} + \cdots - 8u + 1$
c_3	$u^{34} - u^{33} + \cdots + 7u + 1$
c_4	$u^{34} + u^{33} + \cdots + 21u^2 + 2$
c_5	$u^{34} - 3u^{33} + \cdots + 18u + 1$
c_6	$u^{34} - 3u^{33} + \cdots - 4u + 2$
c_7	$u^{34} - 22u^{32} + \cdots - 10u + 1$
c_8	$u^{34} - u^{33} + \cdots + 21u^2 + 2$
c_9	$u^{34} + 2u^{33} + \cdots + 4u + 1$
c_{10}	$u^{34} - u^{32} + \cdots + u + 1$
c_{11}, c_{12}	$u^{34} - 22u^{32} + \cdots + 10u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{34}+5y^{33}+\cdots+6y+1$
c_2	$y^{34}-9y^{33}+\cdots-10y+1$
c_3	$y^{34}+23y^{33}+\cdots+31y+1$
c_4, c_8	$y^{34}+25y^{33}+\cdots+84y+4$
c_5	$y^{34}-17y^{33}+\cdots-26y+1$
c_6	$y^{34}+17y^{33}+\cdots+44y+4$
c_7, c_{11}, c_{12}	$y^{34}-44y^{33}+\cdots-34y+1$
c_9	$y^{34}-10y^{33}+\cdots-2y+1$
c_{10}	$y^{34}-2y^{33}+\cdots+25y+1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.989279+0.203665I$ $a=\ 0.734686-0.351984I$ $b=-0.612336+0.017182I$	$-0.768130-0.646243I$	$4.55850+11.73565I$
$u=-0.989279-0.203665I$ $a=\ 0.734686+0.351984I$ $b=-0.612336-0.017182I$	$-0.768130+0.646243I$	$4.55850-11.73565I$
$u=\ 0.937641+0.055659I$ $a=\ 0.76662+1.30586I$ $b=\ 0.952695-0.837177I$	$0.80858+5.24365I$	$-5.52201-7.49048I$
$u=\ 0.937641-0.055659I$ $a=\ 0.76662-1.30586I$ $b=\ 0.952695+0.837177I$	$0.80858-5.24365I$	$-5.52201+7.49048I$
$u=-0.840695+0.352056I$ $a=\ 0.476619+1.233590I$ $b=\ 1.128380-0.531768I$	$-0.07404+2.79039I$	$-7.16144-3.77932I$
$u=-0.840695-0.352056I$ $a=\ 0.476619-1.233590I$ $b=\ 1.128380+0.531768I$	$-0.07404-2.79039I$	$-7.16144+3.77932I$
$u=\ 0.307755+0.803304I$ $a=-0.761474-0.991730I$ $b=\ 1.046430+0.758500I$	$-1.91553-4.83286I$	$-4.81123+6.61635I$
$u=\ 0.307755-0.803304I$ $a=-0.761474+0.991730I$ $b=\ 1.046430-0.758500I$	$-1.91553+4.83286I$	$-4.81123-6.61635I$
$u=\ 0.757447+0.152912I$ $a=\ 0.078985-1.049000I$ $b=-0.496303-0.391394I$	$1.48015-5.95377I$	$-7.86042+7.92767I$
$u=\ 0.757447-0.152912I$ $a=\ 0.078985+1.049000I$ $b=-0.496303+0.391394I$	$1.48015+5.95377I$	$-7.86042-7.92767I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.117754 + 0.755803I$ $a = -0.254223 + 0.805048I$ $b = -0.276335 + 0.438138I$	$0.02355 - 6.24126I$	$-8.21423 + 5.84475I$
$u = 0.117754 - 0.755803I$ $a = -0.254223 - 0.805048I$ $b = -0.276335 - 0.438138I$	$0.02355 + 6.24126I$	$-8.21423 - 5.84475I$
$u = -1.45892 + 0.00202I$ $a = -0.467200 - 0.594925I$ $b = -1.002530 + 0.141984I$	$-6.65687 - 2.02827I$	0
$u = -1.45892 - 0.00202I$ $a = -0.467200 + 0.594925I$ $b = -1.002530 - 0.141984I$	$-6.65687 + 2.02827I$	0
$u = 1.47127 + 0.12256I$ $a = -0.55365 + 1.30221I$ $b = -0.872420 - 0.726831I$	$-4.84652 - 6.29791I$	0
$u = 1.47127 - 0.12256I$ $a = -0.55365 - 1.30221I$ $b = -0.872420 + 0.726831I$	$-4.84652 + 6.29791I$	0
$u = -1.51061 + 0.14842I$ $a = 0.880143 - 0.339347I$ $b = 0.790066 + 0.560236I$	$-5.96983 + 8.96814I$	0
$u = -1.51061 - 0.14842I$ $a = 0.880143 + 0.339347I$ $b = 0.790066 - 0.560236I$	$-5.96983 - 8.96814I$	0
$u = -0.055421 + 0.471133I$ $a = -2.45158 + 1.46306I$ $b = 0.743456 - 0.481939I$	$0.61118 + 4.38332I$	$-5.0601 - 16.0624I$
$u = -0.055421 - 0.471133I$ $a = -2.45158 - 1.46306I$ $b = 0.743456 + 0.481939I$	$0.61118 - 4.38332I$	$-5.0601 + 16.0624I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.362471+0.293998I$ $a=-1.234700+0.347680I$ $b=\ \ 0.223830-0.867827I$	$-2.69779+1.69937I$	$-13.14521-2.88968I$
$u=-0.362471-0.293998I$ $a=-1.234700-0.347680I$ $b=\ \ 0.223830+0.867827I$	$-2.69779-1.69937I$	$-13.14521+2.88968I$
$u=\ \ 1.55029+0.04466I$ $a=\ \ 0.148100+0.731735I$ $b=-0.041462-1.189880I$	$-9.47670-2.74180I$	0
$u=\ \ 1.55029-0.04466I$ $a=\ \ 0.148100-0.731735I$ $b=-0.041462+1.189880I$	$-9.47670+2.74180I$	0
$u=\ \ 1.59021+0.00218I$ $a=-0.256671+0.520415I$ $b=-1.45056-1.15797I$	$-9.04202-1.90270I$	0
$u=\ \ 1.59021-0.00218I$ $a=-0.256671-0.520415I$ $b=-1.45056+1.15797I$	$-9.04202+1.90270I$	0
$u=-1.58709+0.15483I$ $a=-0.357886-0.861043I$ $b=-1.38538+1.22934I$	$-8.86158+7.90479I$	0
$u=-1.58709-0.15483I$ $a=-0.357886+0.861043I$ $b=-1.38538-1.22934I$	$-8.86158-7.90479I$	0
$u=-1.61457+0.18278I$ $a=-0.426045+0.244454I$ $b=-0.669300-0.364931I$	$-6.67896+1.57798I$	0
$u=-1.61457-0.18278I$ $a=-0.426045-0.244454I$ $b=-0.669300+0.364931I$	$-6.67896-1.57798I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.251994+0.021132I$		
$a=\ \ 0.23982-3.40414I$	$-2.15043-2.00413I$	$-13.9856+2.3495I$
$b=\ \ 1.078590+0.516054I$		
$u=-0.251994-0.021132I$		
$a=\ \ 0.23982+3.40414I$	$-2.15043+2.00413I$	$-13.9856-2.3495I$
$b=\ \ 1.078590-0.516054I$		
$u=\ \ 1.93868+0.15000I$		
$a=-0.061543+0.305664I$	$-7.93749-1.05206I$	0
$b=-0.656821-0.339100I$		
$u=\ \ 1.93868-0.15000I$		
$a=-0.061543-0.305664I$	$-7.93749+1.05206I$	0
$b=-0.656821+0.339100I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{34}-11u^{33}+\cdots-2u+1)(u^{140}+4u^{139}+\cdots-9u+1)$
c_2	$(u^{34}-3u^{33}+\cdots-8u+1)(u^{140}-2u^{139}+\cdots+333381u-48473)$
c_3	$(u^{34}-u^{33}+\cdots+7u+1)$ $\cdot(u^{140}-2u^{139}+\cdots-41435571198u-5037373313)$
c_4	$(u^{34}+u^{33}+\cdots+21u^2+2)(u^{140}+41u^{138}+\cdots-3278u-326)$
c_5	$(u^{34}-3u^{33}+\cdots+18u+1)$ $\cdot(u^{140}-36u^{138}+\cdots+1736923383u+361950067)$
c_6	$(u^{34}-3u^{33}+\cdots-4u+2)(u^{140}-8u^{139}+\cdots+106962u+10082)$
c_7	$(u^{34}-22u^{32}+\cdots-10u+1)(u^{140}-u^{139}+\cdots+1003u-289)$
c_8	$(u^{34}-u^{33}+\cdots+21u^2+2)(u^{140}+41u^{138}+\cdots-3278u-326)$
c_9	$(u^{34}+2u^{33}+\cdots+4u+1)(u^{140}-u^{139}+\cdots+31u-211)$
c_{10}	$(u^{34}-u^{32}+\cdots+u+1)(u^{140}+3u^{139}+\cdots+14u-1)$
c_{11}, c_{12}	$(u^{34}-22u^{32}+\cdots+10u+1)(u^{140}-u^{139}+\cdots+1003u-289)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{34}+5y^{33}+\cdots+6y+1)(y^{140}+10y^{139}+\cdots+27y+1)$
c_2	$(y^{34}-9y^{33}+\cdots-10y+1)$ $\cdot(y^{140}-40y^{139}+\cdots-91720535629y+2349631729)$
c_3	$(y^{34}+23y^{33}+\cdots+31y+1)$ $\cdot(y^{140}+84y^{139}+\cdots+9.52\times10^{20}y+2.54\times10^{19})$
c_4, c_8	$(y^{34}+25y^{33}+\cdots+84y+4)$ $\cdot(y^{140}+82y^{139}+\cdots+3039300y+106276)$
c_5	$(y^{34}-17y^{33}+\cdots-26y+1)$ $\cdot(y^{140}-72y^{139}+\cdots-3.85\times10^{18}y+1.31\times10^{17})$
c_6	$(y^{34}+17y^{33}+\cdots+44y+4)$ $\cdot(y^{140}+50y^{139}+\cdots-13461745852y+101646724)$
c_7, c_{11}, c_{12}	$(y^{34}-44y^{33}+\cdots-34y+1)$ $\cdot(y^{140}-159y^{139}+\cdots-199121y+83521)$
c_9	$(y^{34}-10y^{33}+\cdots-2y+1)(y^{140}-17y^{139}+\cdots-3596401y+44521)$
c_{10}	$(y^{34}-2y^{33}+\cdots+25y+1)(y^{140}+11y^{139}+\cdots+18y+1)$