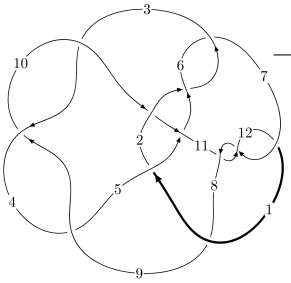
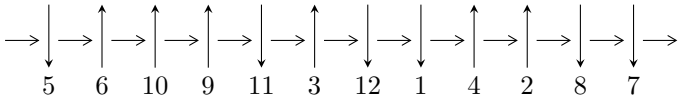
$12a_{1245}$ $(K12a_{1245})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -3.10423 \times 10^{148} u^{106} - 7.11831 \times 10^{147} u^{105} + \cdots + 4.99479 \times 10^{148} b - 4.54934 \times 10^{149},$$
$$1.94237 \times 10^{149} u^{106} + 4.11737 \times 10^{149} u^{105} + \cdots + 9.49010 \times 10^{149} a + 6.20020 \times 10^{150},$$
$$u^{107} + 47u^{105} + \cdots + 141u + 19 \rangle$$
$$I_2^u = \langle -u^{18} - u^{17} + \cdots + b + 1,\ -u^{20} - 3u^{19} + \cdots + a + 2,\ u^{21} + u^{20} + \cdots - 2u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 128 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. $\boldsymbol{I_1^u = \langle -3.10 \times 10^{148} u^{106} - 7.12 \times 10^{147} u^{105} + \cdots + 4.99 \times 10^{148} b - 4.55 \times 10^{149},\ 1.94 \times 10^{149} u^{106} + 4.12 \times 10^{149} u^{105} + \cdots + 9.49 \times 10^{149} a + 6.20 \times 10^{150},\ u^{107} + 47 u^{105} + \cdots + 141 u + 19 \rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.204673u^{106} - 0.433859u^{105} + \cdots - 46.4584u - 6.53333 \\ 0.621494u^{106} + 0.142515u^{105} + \cdots + 61.8909u + 9.10817 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^4 - u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.106621u^{106} + 1.50979u^{105} + \cdots + 122.935u + 18.4439 \\ -1.10574u^{106} - 0.316137u^{105} + \cdots - 140.594u - 23.7789 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.700162u^{106} + 1.60344u^{105} + \cdots + 21.6036u - 3.11076 \\ -0.791948u^{106} - 1.19829u^{105} + \cdots - 211.859u - 36.8786 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.0653729u^{106} + 0.714844u^{105} + \cdots + 58.6773u + 8.36870 \\ -0.839895u^{106} + 0.179953u^{105} + \cdots - 96.0311u - 18.7501 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.508771u^{106} + 1.70694u^{105} + \cdots + 210.070u + 33.7699 \\ -1.31324u^{106} - 0.319179u^{105} + \cdots - 135.759u - 21.9463 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.451438u^{106} + 0.642648u^{105} + \cdots - 59.0515u - 15.1553 \\ -0.610494u^{106} - 0.619999u^{105} + \cdots - 144.993u - 26.1983 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.227553u^{106} - 0.275413u^{105} + \cdots - 161.851u - 42.6015$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{107} + 7u^{106} + \cdots - 3628491u - 687859$
c_2, c_6	$u^{107} + 2u^{106} + \cdots - 142u + 7$
c_3, c_4, c_9	$u^{107} + u^{106} + \cdots + 43u + 1$
c_5	$u^{107} + u^{106} + \cdots + 229u + 31$
c_7, c_{11}, c_{12}	$u^{107} + 47u^{105} + \cdots + 141u + 19$
c_8	$u^{107} - 21u^{105} + \cdots + 516631u + 130055$
c_{10}	$u^{107} - 7u^{106} + \cdots + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{107} - 25y^{106} + \cdots + 17280320516861y - 473150003881$
c_2, c_6	$y^{107} - 62y^{106} + \cdots + 4890y - 49$
c_3, c_4, c_9	$y^{107} + 109y^{106} + \cdots + 1159y - 1$
c_5	$y^{107} + 15y^{106} + \cdots - 27601y - 961$
c_7, c_{11}, c_{12}	$y^{107} + 94y^{106} + \cdots + 6619y - 361$
c_8	$y^{107} - 42y^{106} + \cdots + 181397207991y - 16914303025$
c_{10}	$y^{107} + y^{106} + \cdots + 111y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.905238 + 0.411449I$ $a = -1.096800 - 0.625171I$ $b = 0.733290 - 0.222077I$	$-7.44404 - 2.71116I$	0
$u = 0.905238 - 0.411449I$ $a = -1.096800 + 0.625171I$ $b = 0.733290 + 0.222077I$	$-7.44404 + 2.71116I$	0
$u = 0.968712 + 0.181097I$ $a = -0.0104473 + 0.1331340I$ $b = 0.937029 + 0.334740I$	$-6.63928 - 0.01925I$	0
$u = 0.968712 - 0.181097I$ $a = -0.0104473 - 0.1331340I$ $b = 0.937029 - 0.334740I$	$-6.63928 + 0.01925I$	0
$u = -0.364131 + 0.957400I$ $a = -1.067810 + 0.496371I$ $b = 0.302228 + 1.008320I$	$-7.21376 - 2.28542I$	0
$u = -0.364131 - 0.957400I$ $a = -1.067810 - 0.496371I$ $b = 0.302228 - 1.008320I$	$-7.21376 + 2.28542I$	0
$u = 0.345292 + 0.840140I$ $a = 1.007790 + 0.275821I$ $b = -1.130510 - 0.470696I$	$2.36893 + 4.77276I$	0
$u = 0.345292 - 0.840140I$ $a = 1.007790 - 0.275821I$ $b = -1.130510 + 0.470696I$	$2.36893 - 4.77276I$	0
$u = -0.867184 + 0.240558I$ $a = -0.47649 + 1.37668I$ $b = 1.27141 + 0.66969I$	$-6.4986 + 13.0493I$	0
$u = -0.867184 - 0.240558I$ $a = -0.47649 - 1.37668I$ $b = 1.27141 - 0.66969I$	$-6.4986 - 13.0493I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.536285+0.966933I$ $a=-0.548316+0.237729I$ $b=1.236170-0.610065I$	$-4.26410-8.12654I$	0
$u=-0.536285-0.966933I$ $a=-0.548316-0.237729I$ $b=1.236170+0.610065I$	$-4.26410+8.12654I$	0
$u=-0.857929$ $a=0.114460$ $b=-0.723700$	-1.60767	-15.4610
$u=0.206911+1.131310I$ $a=0.695628+0.106558I$ $b=-0.329623+0.782791I$	$-0.025083+0.213579I$	0
$u=0.206911-1.131310I$ $a=0.695628-0.106558I$ $b=-0.329623-0.782791I$	$-0.025083-0.213579I$	0
$u=-0.345424+1.108080I$ $a=0.985098-0.289554I$ $b=-0.849398-0.359510I$	$1.80844+4.40835I$	0
$u=-0.345424-1.108080I$ $a=0.985098+0.289554I$ $b=-0.849398+0.359510I$	$1.80844-4.40835I$	0
$u=-0.792358+0.211587I$ $a=0.490747-0.859656I$ $b=0.329735-1.191950I$	$-9.52738+6.53629I$	$-6.31446-5.70415I$
$u=-0.792358-0.211587I$ $a=0.490747+0.859656I$ $b=0.329735+1.191950I$	$-9.52738-6.53629I$	$-6.31446+5.70415I$
$u=0.637713+1.006310I$ $a=-0.868509-0.634692I$ $b=1.080370-0.397617I$	$-4.09706-5.51234I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.637713 - 1.006310I$ $a = -0.868509 + 0.634692I$ $b = 1.080370 + 0.397617I$	$-4.09706 + 5.51234I$	0
$u = -0.084007 + 1.190680I$ $a = 1.380240 - 0.083337I$ $b = -0.977538 - 0.646999I$	$1.72016 + 4.71467I$	0
$u = -0.084007 - 1.190680I$ $a = 1.380240 + 0.083337I$ $b = -0.977538 + 0.646999I$	$1.72016 - 4.71467I$	0
$u = 0.800773 + 0.066671I$ $a = -0.873723 + 1.092160I$ $b = -0.904582 + 0.442790I$	$-7.42230 - 4.55808I$	$-5.52745 + 6.03757I$
$u = 0.800773 - 0.066671I$ $a = -0.873723 - 1.092160I$ $b = -0.904582 - 0.442790I$	$-7.42230 + 4.55808I$	$-5.52745 - 6.03757I$
$u = 0.767976 + 0.222888I$ $a = 0.70826 + 1.47282I$ $b = -1.214880 + 0.531219I$	$0.31440 - 8.85668I$	$-0.78742 + 8.52974I$
$u = 0.767976 - 0.222888I$ $a = 0.70826 - 1.47282I$ $b = -1.214880 - 0.531219I$	$0.31440 + 8.85668I$	$-0.78742 - 8.52974I$
$u = 0.367132 + 0.696445I$ $a = -0.959933 + 0.599740I$ $b = 0.128465 + 0.600907I$	$-6.67824 - 1.82046I$	$-6.27188 + 3.23038I$
$u = 0.367132 - 0.696445I$ $a = -0.959933 - 0.599740I$ $b = 0.128465 - 0.600907I$	$-6.67824 + 1.82046I$	$-6.27188 - 3.23038I$
$u = -0.199384 + 1.216730I$ $a = -0.964810 - 0.781065I$ $b = 0.968682 - 0.447513I$	$3.29244 + 0.02020I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.199384-1.216730I$ $a=-0.964810+0.781065I$ $b=\ \ 0.968682+0.447513I$	$3.29244-0.02020I$	0
$u=-0.670392+0.370224I$ $a=\ \ 0.754651-0.747405I$ $b=-0.937967-0.200384I$	$-0.37452+2.01494I$	$-5.67970-7.04796I$
$u=-0.670392-0.370224I$ $a=\ \ 0.754651+0.747405I$ $b=-0.937967+0.200384I$	$-0.37452-2.01494I$	$-5.67970+7.04796I$
$u=\ \ 0.354215+1.193730I$ $a=-0.445993+0.201512I$ $b=-0.929440-0.357635I$	$-3.96766+0.38490I$	0
$u=\ \ 0.354215-1.193730I$ $a=-0.445993-0.201512I$ $b=-0.929440+0.357635I$	$-3.96766-0.38490I$	0
$u=\ \ 0.223063+1.253010I$ $a=\ \ 3.05099+2.52713I$ $b=-0.834320+0.218356I$	$-4.56973-2.16436I$	0
$u=\ \ 0.223063-1.253010I$ $a=\ \ 3.05099-2.52713I$ $b=-0.834320-0.218356I$	$-4.56973+2.16436I$	0
$u=\ \ 0.714097+0.136994I$ $a=-0.436764-0.715435I$ $b=-0.147954-0.920169I$	$-2.91868-3.67856I$	$-4.86738+6.69635I$
$u=\ \ 0.714097-0.136994I$ $a=-0.436764+0.715435I$ $b=-0.147954+0.920169I$	$-2.91868+3.67856I$	$-4.86738-6.69635I$
$u=-0.575944+0.442931I$ $a=\ \ 0.149085-1.097360I$ $b=-1.44419-0.17281I$	$-1.49802+1.95208I$	$1.14695-2.61988I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.575944-0.442931I$ $a=\ \ 0.149085+1.097360I$ $b=-1.44419+0.17281I$	$-1.49802-1.95208I$	$1.14695+2.61988I$
$u=-0.722586$ $a=\ \ 0.995155$ $b=\ \ 0.393582$	-2.02123	-7.49440
$u=-0.716054$ $a=\ \ 0.757130$ $b=\ \ 0.209876$	-2.02575	-6.33530
$u=-0.243672+1.267380I$ $a=-0.096938-0.702103I$ $b=-1.05045+0.96322I$	$0.565624-0.596893I$	0
$u=-0.243672-1.267380I$ $a=-0.096938+0.702103I$ $b=-1.05045-0.96322I$	$0.565624+0.596893I$	0
$u=-0.036370+1.293160I$ $a=\ \ 0.074088-0.754865I$ $b=\ \ 0.410950+0.208667I$	$4.91364+1.37867I$	0
$u=-0.036370-1.293160I$ $a=\ \ 0.074088+0.754865I$ $b=\ \ 0.410950-0.208667I$	$4.91364-1.37867I$	0
$u=\ \ 0.078685+1.297580I$ $a=\ \ 0.078391-0.672197I$ $b=\ \ 0.607084+0.770314I$	$4.79778+1.11673I$	0
$u=\ \ 0.078685-1.297580I$ $a=\ \ 0.078391+0.672197I$ $b=\ \ 0.607084-0.770314I$	$4.79778-1.11673I$	0
$u=-0.288101+1.269850I$ $a=\ \ 0.170344+0.588717I$ $b=\ \ 0.469201+0.289222I$	$1.91279+3.65319I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.288101-1.269850I$ $a=\ \ 0.170344-0.588717I$ $b=\ \ 0.469201-0.289222I$	$1.91279-3.65319I$	0
$u=-0.143161+1.305410I$ $a=\ \ 1.79846-1.26846I$ $b=-1.28537+0.74411I$	$2.38914-1.51143I$	0
$u=-0.143161-1.305410I$ $a=\ \ 1.79846+1.26846I$ $b=-1.28537-0.74411I$	$2.38914+1.51143I$	0
$u=-0.296280+1.282910I$ $a=\ \ 0.477597+0.281281I$ $b=\ \ 0.196285-0.041031I$	$1.97856+3.65328I$	0
$u=-0.296280-1.282910I$ $a=\ \ 0.477597-0.281281I$ $b=\ \ 0.196285+0.041031I$	$1.97856-3.65328I$	0
$u=-0.666478+0.124519I$ $a=-0.99150+1.99487I$ $b=\ \ 1.064320+0.389913I$	$0.07969+3.06984I$	$-3.80104-5.63443I$
$u=-0.666478-0.124519I$ $a=-0.99150-1.99487I$ $b=\ \ 1.064320-0.389913I$	$0.07969-3.06984I$	$-3.80104+5.63443I$
$u=-0.258550+1.307000I$ $a=\ \ 2.14969-1.17419I$ $b=-1.21296-0.94768I$	$0.97250+7.10853I$	0
$u=-0.258550-1.307000I$ $a=\ \ 2.14969+1.17419I$ $b=-1.21296+0.94768I$	$0.97250-7.10853I$	0
$u=\ \ 0.660120+0.091737I$ $a=-0.00874-2.54586I$ $b=-0.697407-0.390238I$	$-8.10990-0.94352I$	$-6.26053-1.76573I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.660120 - 0.091737I$ $a = -0.00874 + 2.54586I$ $b = -0.697407 + 0.390238I$	$-8.10990 + 0.94352I$	$-6.26053 + 1.76573I$
$u = -0.651207 + 0.035721I$ $a = -0.47420 - 1.85434I$ $b = -1.13728 - 0.93902I$	$-3.24839 + 3.81524I$	$-3.39684 - 4.40039I$
$u = -0.651207 - 0.035721I$ $a = -0.47420 + 1.85434I$ $b = -1.13728 + 0.93902I$	$-3.24839 - 3.81524I$	$-3.39684 + 4.40039I$
$u = 0.345619 + 1.308420I$ $a = 0.533771 + 1.175410I$ $b = -0.890795 + 0.506629I$	$-3.12323 - 8.68533I$	0
$u = 0.345619 - 1.308420I$ $a = 0.533771 - 1.175410I$ $b = -0.890795 - 0.506629I$	$-3.12323 + 8.68533I$	0
$u = 0.280938 + 1.324890I$ $a = 0.299470 - 0.684292I$ $b = -0.722655 - 0.561524I$	$-3.63976 - 4.39403I$	0
$u = 0.280938 - 1.324890I$ $a = 0.299470 + 0.684292I$ $b = -0.722655 + 0.561524I$	$-3.63976 + 4.39403I$	0
$u = -0.276724 + 1.344210I$ $a = -2.59997 + 1.55783I$ $b = 1.135090 + 0.374256I$	$4.72511 + 6.51457I$	0
$u = -0.276724 - 1.344210I$ $a = -2.59997 - 1.55783I$ $b = 1.135090 - 0.374256I$	$4.72511 - 6.51457I$	0
$u = 0.197941 + 1.358640I$ $a = -1.97103 - 1.00726I$ $b = 1.41982 + 0.25244I$	$7.03503 - 2.12409I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.197941 - 1.358640I$ $a = -1.97103 + 1.00726I$ $b = 1.41982 - 0.25244I$	$7.03503 + 2.12409I$	0
$u = 0.294414 + 1.345570I$ $a = -0.774690 + 0.483534I$ $b = -0.066343 - 1.022600I$	$1.75619 - 7.33781I$	0
$u = 0.294414 - 1.345570I$ $a = -0.774690 - 0.483534I$ $b = -0.066343 + 1.022600I$	$1.75619 + 7.33781I$	0
$u = -0.097815 + 1.376750I$ $a = -2.89041 + 0.92625I$ $b = 1.083180 - 0.131860I$	$7.07610 + 0.37862I$	0
$u = -0.097815 - 1.376750I$ $a = -2.89041 - 0.92625I$ $b = 1.083180 + 0.131860I$	$7.07610 - 0.37862I$	0
$u = 0.208123 + 1.386110I$ $a = -2.22237 - 0.82857I$ $b = 1.33473 - 0.67094I$	$6.95556 - 5.37743I$	0
$u = 0.208123 - 1.386110I$ $a = -2.22237 + 0.82857I$ $b = 1.33473 + 0.67094I$	$6.95556 + 5.37743I$	0
$u = -0.00838 + 1.42378I$ $a = -0.086807 - 0.587384I$ $b = -0.223732 + 1.105900I$	$-0.00133 - 2.31664I$	0
$u = -0.00838 - 1.42378I$ $a = -0.086807 + 0.587384I$ $b = -0.223732 - 1.105900I$	$-0.00133 + 2.31664I$	0
$u = 0.31803 + 1.39028I$ $a = 2.21075 + 1.25584I$ $b = -1.267560 + 0.539509I$	$5.42749 - 12.79330I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.31803 - 1.39028I$ $a = 2.21075 - 1.25584I$ $b = -1.267560 - 0.539509I$	$5.42749 + 12.79330I$	0
$u = -0.32815 + 1.39091I$ $a = 0.678986 + 0.619610I$ $b = 0.324336 - 1.298330I$	$-4.44471 + 10.58770I$	0
$u = -0.32815 - 1.39091I$ $a = 0.678986 - 0.619610I$ $b = 0.324336 + 1.298330I$	$-4.44471 - 10.58770I$	0
$u = 0.519502 + 0.232304I$ $a = -0.33135 - 1.92210I$ $b = 1.133900 - 0.594006I$	$1.79284 - 2.65666I$	$4.50273 + 10.14622I$
$u = 0.519502 - 0.232304I$ $a = -0.33135 + 1.92210I$ $b = 1.133900 + 0.594006I$	$1.79284 + 2.65666I$	$4.50273 - 10.14622I$
$u = 0.42827 + 1.36797I$ $a = -0.529601 - 0.345886I$ $b = 0.836218 + 0.286440I$	$-1.81153 - 4.99186I$	0
$u = 0.42827 - 1.36797I$ $a = -0.529601 + 0.345886I$ $b = 0.836218 - 0.286440I$	$-1.81153 + 4.99186I$	0
$u = -0.28179 + 1.42821I$ $a = 1.84850 - 0.78017I$ $b = -1.163190 - 0.192867I$	$5.33469 + 5.55188I$	0
$u = -0.28179 - 1.42821I$ $a = 1.84850 + 0.78017I$ $b = -1.163190 + 0.192867I$	$5.33469 - 5.55188I$	0
$u = -0.20981 + 1.44344I$ $a = 2.08106 - 0.75214I$ $b = -1.70160 - 0.37611I$	$4.50767 + 4.78839I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.20981-1.44344I$ $a=\ \ 2.08106+0.75214I$ $b=-1.70160+0.37611I$	$4.50767-4.78839I$	0
$u=-0.36192+1.41375I$ $a=-1.95276+1.17852I$ $b=\ \ 1.30791+0.69666I$	$-1.2508+17.4764I$	0
$u=-0.36192-1.41375I$ $a=-1.95276-1.17852I$ $b=\ \ 1.30791-0.69666I$	$-1.2508-17.4764I$	0
$u=\ \ 0.00947+1.46699I$ $a=\ \ 2.37259+0.24262I$ $b=-1.239550-0.308975I$	$9.69671+4.17530I$	0
$u=\ \ 0.00947-1.46699I$ $a=\ \ 2.37259-0.24262I$ $b=-1.239550+0.308975I$	$9.69671-4.17530I$	0
$u=\ \ 0.39552+1.45562I$ $a=-1.68206-0.82245I$ $b=\ \ 0.907327-0.271019I$	$-1.60211-7.49643I$	0
$u=\ \ 0.39552-1.45562I$ $a=-1.68206+0.82245I$ $b=\ \ 0.907327+0.271019I$	$-1.60211+7.49643I$	0
$u=\ \ 0.393208+0.230128I$ $a=\ \ 0.094167-0.695236I$ $b=\ \ 1.166280+0.228328I$	$2.10704+0.24912I$	$5.11122+2.00536I$
$u=\ \ 0.393208-0.230128I$ $a=\ \ 0.094167+0.695236I$ $b=\ \ 1.166280-0.228328I$	$2.10704-0.24912I$	$5.11122-2.00536I$
$u=-0.150834+0.411324I$ $a=\ \ 0.614979-0.389209I$ $b=-0.088919+0.383206I$	$-0.018230+1.014060I$	$-0.41757-6.37169I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.150834-0.411324I$ $a=\ \ 0.614979+0.389209I$ $b=-0.088919-0.383206I$	$-0.018230-1.014060I$	$-0.41757+6.37169I$
$u=\ \ 0.06304+1.56420I$ $a=-1.94911-0.00828I$ $b=\ \ 1.337920-0.437620I$	$4.90196-7.43262I$	0
$u=\ \ 0.06304-1.56420I$ $a=-1.94911+0.00828I$ $b=\ \ 1.337920+0.437620I$	$4.90196+7.43262I$	0
$u=-0.263778+0.275422I$ $a=-2.48263+2.41700I$ $b=\ \ 0.934644-0.228588I$	$1.78989-1.01286I$	$2.41726-2.03464I$
$u=-0.263778-0.275422I$ $a=-2.48263-2.41700I$ $b=\ \ 0.934644+0.228588I$	$1.78989+1.01286I$	$2.41726+2.03464I$
$u=-0.337588+0.032266I$ $a=-0.739693-0.011776I$ $b=-1.148220+0.707709I$	$-1.80899-3.33482I$	$-7.29428-2.25974I$
$u=-0.337588-0.032266I$ $a=-0.739693+0.011776I$ $b=-1.148220-0.707709I$	$-1.80899+3.33482I$	$-7.29428+2.25974I$

II.

$\boldsymbol{I_2^u = \langle -u^{18}-u^{17}+\cdots+b+1,\ -u^{20}-3u^{19}+\cdots+a+2,\ u^{21}+u^{20}+\cdots-2u-1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{20}+3u^{19}+\cdots-7u-2 \\ u^{18}+u^{17}+\cdots+u-1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^4-u^2+1 \\ u^4+2u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -2u^{19}-2u^{18}+\cdots+5u+1 \\ 3u^{19}+2u^{18}+\cdots-7u^2-u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 4u^{20}+3u^{19}+\cdots+u-2 \\ -3u^{20}-26u^{18}+\cdots+3u-2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -4u^{19}-4u^{18}+\cdots+7u+2 \\ 4u^{19}+3u^{18}+\cdots-3u-1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{20}-4u^{19}+\cdots+5u+1 \\ u^{20}+3u^{19}+\cdots-7u^2-u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{20}+7u^{18}+\cdots+u+3 \\ -2u^{20}-17u^{18}+\cdots+7u^2-4u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= 3u^{20}-3u^{19}+26u^{18}-27u^{17}+92u^{16}-99u^{15}+161u^{14}-180u^{13}+119u^{12}-148u^{11}-23u^{10}-14u^9-61u^8+26u^7+46u^6-41u^5+92u^4-51u^3+34u^2-12u+1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{21}+3u^{19}+\cdots+4u^3-1$
c_2	$u^{21}-3u^{20}+\cdots-3u+1$
c_3, c_4	$u^{21}+12u^{19}+\cdots-3u^2-1$
c_5	$u^{21}+3u^{19}+\cdots-3u^2-1$
c_6	$u^{21}+3u^{20}+\cdots-3u-1$
c_7	$u^{21}+u^{20}+\cdots-2u-1$
c_8	$u^{21}-u^{20}+\cdots+3u^2-1$
c_9	$u^{21}+12u^{19}+\cdots+3u^2+1$
c_{10}	$u^{21}+4u^{18}+\cdots+2u-1$
c_{11}, c_{12}	$u^{21}-u^{20}+\cdots-2u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{21} + 6y^{20} + \cdots + 4y^2 - 1$
c_2, c_6	$y^{21} - 15y^{20} + \cdots + 21y - 1$
c_3, c_4, c_9	$y^{21} + 24y^{20} + \cdots - 6y - 1$
c_5	$y^{21} + 6y^{20} + \cdots - 6y - 1$
c_7, c_{11}, c_{12}	$y^{21} + 21y^{20} + \cdots + 6y - 1$
c_8	$y^{21} - 7y^{20} + \cdots + 6y - 1$
c_{10}	$y^{21} + 8y^{19} + \cdots + 6y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.850535+0.270683I$ $a=\ \ 0.772663-1.107970I$ $b=-0.698181-0.147373I$	$-7.25334+2.25396I$	$-2.51904+1.51124I$
$u=-0.850535-0.270683I$ $a=\ \ 0.772663+1.107970I$ $b=-0.698181+0.147373I$	$-7.25334-2.25396I$	$-2.51904-1.51124I$
$u=-0.208319+1.151210I$ $a=-0.54251+2.07788I$ $b=-0.546624+0.066738I$	$-5.00712+1.29880I$	$-2.18413+0.91161I$
$u=-0.208319-1.151210I$ $a=-0.54251-2.07788I$ $b=-0.546624-0.066738I$	$-5.00712-1.29880I$	$-2.18413-0.91161I$
$u=\ \ 0.795925$ $a=\ \ 0.393034$ $b=\ \ 0.779315$	-1.18509	6.11500
$u=\ \ 0.123270+1.255540I$ $a=\ \ 0.103398+0.140021I$ $b=\ \ 0.806334+0.494666I$	$4.61981+0.10053I$	$4.67568+0.72372I$
$u=\ \ 0.123270-1.255540I$ $a=\ \ 0.103398-0.140021I$ $b=\ \ 0.806334-0.494666I$	$4.61981-0.10053I$	$4.67568-0.72372I$
$u=\ \ 0.316220+1.248030I$ $a=-0.236664-0.243629I$ $b=\ \ 0.725880-0.143499I$	$2.61302-4.01014I$	$8.65050+4.98325I$
$u=\ \ 0.316220-1.248030I$ $a=-0.236664+0.243629I$ $b=\ \ 0.725880+0.143499I$	$2.61302+4.01014I$	$8.65050-4.98325I$
$u=-0.077211+1.297150I$ $a=\ \ 0.786355-1.165330I$ $b=-1.00703+1.01195I$	$2.14044-2.54928I$	$3.26865+5.24031I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.077211-1.297150I$ $a=\ \ 0.786355+1.165330I$ $b=-1.00703-1.01195I$	$2.14044+2.54928I$	$3.26865-5.24031I$
$u=-0.40075+1.35681I$ $a=\ \ 1.097720-0.843631I$ $b=-0.724177-0.339747I$	$-2.22720+6.87921I$	$-2.11837-4.50343I$
$u=-0.40075-1.35681I$ $a=\ \ 1.097720+0.843631I$ $b=-0.724177+0.339747I$	$-2.22720-6.87921I$	$-2.11837+4.50343I$
$u=\ \ 0.20322+1.41023I$ $a=-2.23359-0.86234I$ $b=\ \ 1.286100-0.411263I$	$6.67021-4.48387I$	$6.16458+1.58623I$
$u=\ \ 0.20322-1.41023I$ $a=-2.23359+0.86234I$ $b=\ \ 1.286100+0.411263I$	$6.67021+4.48387I$	$6.16458-1.58623I$
$u=-0.16274+1.44102I$ $a=\ \ 2.20325-0.36604I$ $b=-1.53931-0.67627I$	$4.13324+5.57019I$	$2.10575-7.26334I$
$u=-0.16274-1.44102I$ $a=\ \ 2.20325+0.36604I$ $b=-1.53931+0.67627I$	$4.13324-5.57019I$	$2.10575+7.26334I$
$u=\ \ 0.443564+0.214151I$ $a=-1.10819-2.26934I$ $b=\ \ 1.020830-0.400990I$	$1.32745-1.97147I$	$-1.58797+2.75206I$
$u=\ \ 0.443564-0.214151I$ $a=-1.10819+2.26934I$ $b=\ \ 1.020830+0.400990I$	$1.32745+1.97147I$	$-1.58797-2.75206I$
$u=-0.284687+0.209100I$ $a=\ \ 0.46104-2.21836I$ $b=-1.21347-0.79087I$	$-1.48915+3.72263I$	$3.48687-9.47280I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.284687-0.209100I$		
$a=\ \ 0.46104+2.21836I$	$-1.48915-3.72263I$	$3.48687+9.47280I$
$b=-1.21347+0.79087I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{21}+3u^{19}+\cdots+4u^3-1)(u^{107}+7u^{106}+\cdots-3628491u-687859)$
c_2	$(u^{21}-3u^{20}+\cdots-3u+1)(u^{107}+2u^{106}+\cdots-142u+7)$
c_3, c_4	$(u^{21}+12u^{19}+\cdots-3u^2-1)(u^{107}+u^{106}+\cdots+43u+1)$
c_5	$(u^{21}+3u^{19}+\cdots-3u^2-1)(u^{107}+u^{106}+\cdots+229u+31)$
c_6	$(u^{21}+3u^{20}+\cdots-3u-1)(u^{107}+2u^{106}+\cdots-142u+7)$
c_7	$(u^{21}+u^{20}+\cdots-2u-1)(u^{107}+47u^{105}+\cdots+141u+19)$
c_8	$(u^{21}-u^{20}+\cdots+3u^2-1)(u^{107}-21u^{105}+\cdots+516631u+130055)$
c_9	$(u^{21}+12u^{19}+\cdots+3u^2+1)(u^{107}+u^{106}+\cdots+43u+1)$
c_{10}	$(u^{21}+4u^{18}+\cdots+2u-1)(u^{107}-7u^{106}+\cdots+u+1)$
c_{11}, c_{12}	$(u^{21}-u^{20}+\cdots-2u+1)(u^{107}+47u^{105}+\cdots+141u+19)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{21}+6y^{20}+\cdots+4y^2-1)$ $\cdot(y^{107}-25y^{106}+\cdots+17280320516861y-473150003881)$
c_2, c_6	$(y^{21}-15y^{20}+\cdots+21y-1)(y^{107}-62y^{106}+\cdots+4890y-49)$
c_3, c_4, c_9	$(y^{21}+24y^{20}+\cdots-6y-1)(y^{107}+109y^{106}+\cdots+1159y-1)$
c_5	$(y^{21}+6y^{20}+\cdots-6y-1)(y^{107}+15y^{106}+\cdots-27601y-961)$
c_7, c_{11}, c_{12}	$(y^{21}+21y^{20}+\cdots+6y-1)(y^{107}+94y^{106}+\cdots+6619y-361)$
c_8	$(y^{21}-7y^{20}+\cdots+6y-1)$ $\cdot(y^{107}-42y^{106}+\cdots+181397207991y-16914303025)$
c_{10}	$(y^{21}+8y^{19}+\cdots+6y-1)(y^{107}+y^{106}+\cdots+111y-1)$