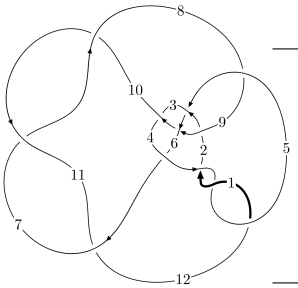
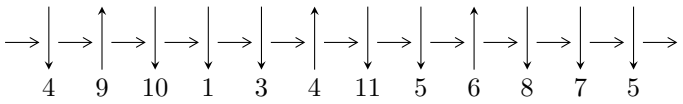
$12n_{0733}$ $(K12n_{0733})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 7.85180 \times 10^{324} u^{84} - 5.53960 \times 10^{324} u^{83} + \cdots + 5.09556 \times 10^{323} b + 5.72110 \times 10^{326},$$
$$5.13372 \times 10^{326} u^{84} - 3.22757 \times 10^{326} u^{83} + \cdots + 1.17198 \times 10^{325} a + 3.19118 \times 10^{328},$$
$$u^{85} - u^{84} + \cdots + 171u - 23\rangle$$
$$I_2^u = \langle 5u^{19} - 6u^{18} + \cdots + 2b - 13,\ 4u^{19} - 5u^{18} + \cdots + 2a - 3,\ u^{20} + 3u^{18} + \cdots + 5u^2 + 1\rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 105 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. $\boldsymbol{I_1^u = \langle 7.85 \times 10^{324} u^{84} - 5.54 \times 10^{324} u^{83} + \cdots + 5.10 \times 10^{323} b + 5.72 \times 10^{326},\ 5.13 \times 10^{326} u^{84} - 3.23 \times 10^{326} u^{83} + \cdots + 1.17 \times 10^{325} a + 3.19 \times 10^{328},\ u^{85} - u^{84} + \cdots + 171u - 23 \rangle}$

(i) Arc colorings

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

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

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

$$a_6 = \begin{pmatrix} -43.8039u^{84} + 27.5395u^{83} + \cdots + 13107.8u - 2722.90 \\ -15.4091u^{84} + 10.8714u^{83} + \cdots + 5055.34u - 1122.76 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -53.6006u^{84} + 34.8765u^{83} + \cdots + 16389.4u - 3471.58 \\ -15.7706u^{84} + 11.3455u^{83} + \cdots + 5250.63u - 1179.34 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -59.2130u^{84} + 38.4110u^{83} + \cdots + 18163.1u - 3845.66 \\ -15.4091u^{84} + 10.8714u^{83} + \cdots + 5055.34u - 1122.76 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -100.072u^{84} + 57.1100u^{83} + \cdots + 27587.5u - 5300.30 \\ -27.6763u^{84} + 16.6280u^{83} + \cdots + 7904.83u - 1574.20 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -32.2653u^{84} + 25.7906u^{83} + \cdots + 11118.1u - 2655.82 \\ 17.9359u^{84} - 11.0484u^{83} + \cdots - 5175.15u + 1047.54 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -14.0239u^{84} + 13.3991u^{83} + \cdots + 5577.88u - 1459.36 \\ 19.8199u^{84} - 12.5011u^{83} + \cdots - 5755.92u + 1182.08 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -63.1948u^{84} + 34.9424u^{83} + \cdots + 17087.5u - 3198.98 \\ -17.6497u^{84} + 7.33319u^{83} + \cdots + 4042.64u - 585.929 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 23.0154u^{84} - 12.3805u^{83} + \cdots - 5914.82u + 1084.83 \\ -55.2963u^{84} + 33.1820u^{83} + \cdots + 15690.5u - 3105.92 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -59.0148u^{84} + 37.4295u^{83} + \cdots + 17255.2u - 3578.54 \\ 43.6488u^{84} - 27.5891u^{83} + \cdots - 12864.2u + 2648.65 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 31.3947u^{84} - 16.5057u^{83} + \cdots - 10580.4u + 2033.20$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_{12}	$u^{85} + 5u^{84} + \cdots + 97u + 11$
c_2	$u^{85} - u^{84} + \cdots + 301u + 71$
c_3	$u^{85} + u^{84} + \cdots + 171u + 23$
c_5	$u^{85} - 3u^{84} + \cdots - 22u + 3$
c_6	$u^{85} - 2u^{84} + \cdots + 54441u + 8717$
c_7, c_{10}, c_{11}	$u^{85} + 3u^{84} + \cdots - 31u + 21$
c_8	$u^{85} - 2u^{84} + \cdots - 43138551u + 7230569$
c_9	$u^{85} - 5u^{84} + \cdots + 9u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{12}	$y^{85} + 31y^{84} + \cdots - 4605y - 121$
c_2	$y^{85} + 25y^{84} + \cdots - 1039577y - 5041$
c_3	$y^{85} - 3y^{84} + \cdots + 25423y - 529$
c_5	$y^{85} - 5y^{84} + \cdots + 454y - 9$
c_6	$y^{85} + 32y^{84} + \cdots - 3915581617y - 75986089$
c_7, c_{10}, c_{11}	$y^{85} + 73y^{84} + \cdots + 247y - 441$
c_8	$y^{85} - 24y^{84} + \cdots + 583651994447037y - 52281128063761$
c_9	$y^{85} + 5y^{84} + \cdots + 13y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.831046 + 0.557044I$ $a = -0.241571 - 0.365025I$ $b = 0.849319 + 0.261416I$	$-1.44654 - 0.25256I$	0
$u = 0.831046 - 0.557044I$ $a = -0.241571 + 0.365025I$ $b = 0.849319 - 0.261416I$	$-1.44654 + 0.25256I$	0
$u = -0.127487 + 0.957078I$ $a = 0.638468 - 1.021490I$ $b = -0.698591 + 1.035080I$	$6.99156 + 0.55070I$	0
$u = -0.127487 - 0.957078I$ $a = 0.638468 + 1.021490I$ $b = -0.698591 - 1.035080I$	$6.99156 - 0.55070I$	0
$u = -0.813260 + 0.513670I$ $a = 0.488792 + 0.961975I$ $b = 0.309711 - 0.495129I$	$1.12817 + 2.01460I$	0
$u = -0.813260 - 0.513670I$ $a = 0.488792 - 0.961975I$ $b = 0.309711 + 0.495129I$	$1.12817 - 2.01460I$	0
$u = -0.698511 + 0.631519I$ $a = -0.566077 - 1.087700I$ $b = -1.27175 + 0.92234I$	$5.16779 + 6.57404I$	0
$u = -0.698511 - 0.631519I$ $a = -0.566077 + 1.087700I$ $b = -1.27175 - 0.92234I$	$5.16779 - 6.57404I$	0
$u = -0.818146 + 0.459472I$ $a = 0.31309 + 1.54710I$ $b = 0.747796 - 0.917953I$	$0.55790 + 4.56915I$	0
$u = -0.818146 - 0.459472I$ $a = 0.31309 - 1.54710I$ $b = 0.747796 + 0.917953I$	$0.55790 - 4.56915I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.065336 + 0.910896I$ $a = 1.115130 + 0.555808I$ $b = -0.547614 - 0.217318I$	$-0.64133 - 2.51721I$	0
$u = 0.065336 - 0.910896I$ $a = 1.115130 - 0.555808I$ $b = -0.547614 + 0.217318I$	$-0.64133 + 2.51721I$	0
$u = 0.882759 + 0.165692I$ $a = 0.145743 + 1.002340I$ $b = 0.85643 - 1.48425I$	$0.54061 + 5.76543I$	0
$u = 0.882759 - 0.165692I$ $a = 0.145743 - 1.002340I$ $b = 0.85643 + 1.48425I$	$0.54061 - 5.76543I$	0
$u = 0.885894$ $a = 0.163031$ $b = 0.708021$	-1.16186	0
$u = 1.034170 + 0.415668I$ $a = 0.520931 - 1.110500I$ $b = 1.08674 + 1.06190I$	$3.59865 - 4.22466I$	0
$u = 1.034170 - 0.415668I$ $a = 0.520931 + 1.110500I$ $b = 1.08674 - 1.06190I$	$3.59865 + 4.22466I$	0
$u = -0.742150 + 0.452220I$ $a = 0.137812 + 0.901496I$ $b = -0.35871 - 1.48351I$	$0.464606 + 0.538811I$	0
$u = -0.742150 - 0.452220I$ $a = 0.137812 - 0.901496I$ $b = -0.35871 + 1.48351I$	$0.464606 - 0.538811I$	0
$u = 0.533262 + 0.684484I$ $a = -0.49644 - 1.55374I$ $b = 0.412791 + 1.193030I$	$5.66071 - 5.76005I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.533262 - 0.684484I$ $a = -0.49644 + 1.55374I$ $b = 0.412791 - 1.193030I$	$5.66071 + 5.76005I$	0
$u = -0.857850 + 0.050796I$ $a = 1.66393 - 1.08609I$ $b = 0.939994 + 0.127390I$	$0.12817 - 6.34062I$	0
$u = -0.857850 - 0.050796I$ $a = 1.66393 + 1.08609I$ $b = 0.939994 - 0.127390I$	$0.12817 + 6.34062I$	0
$u = -0.655503 + 0.529519I$ $a = 1.70492 + 0.55646I$ $b = 0.482345 - 0.572650I$	$0.80709 + 3.24268I$	0
$u = -0.655503 - 0.529519I$ $a = 1.70492 - 0.55646I$ $b = 0.482345 + 0.572650I$	$0.80709 - 3.24268I$	0
$u = -1.162410 + 0.089791I$ $a = -0.106902 - 0.116132I$ $b = 0.897619 + 0.731041I$	$3.40154 - 2.94778I$	0
$u = -1.162410 - 0.089791I$ $a = -0.106902 + 0.116132I$ $b = 0.897619 - 0.731041I$	$3.40154 + 2.94778I$	0
$u = 0.439950 + 0.685441I$ $a = -0.01004 + 1.48686I$ $b = -0.983699 - 0.818536I$	$2.22530 - 3.06319I$	0
$u = 0.439950 - 0.685441I$ $a = -0.01004 - 1.48686I$ $b = -0.983699 + 0.818536I$	$2.22530 + 3.06319I$	0
$u = 0.567035 + 0.546622I$ $a = -2.47306 + 0.15550I$ $b = -0.473503 - 0.438600I$	$1.97158 - 8.71574I$	$-6.0000 + 13.5098I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.567035 - 0.546622I$ $a = -2.47306 - 0.15550I$ $b = -0.473503 + 0.438600I$	$1.97158 + 8.71574I$	$-6.0000 - 13.5098I$
$u = 0.913597 + 0.809553I$ $a = -0.285654 + 0.490373I$ $b = -0.86921 - 1.39950I$	$7.94883 - 3.03290I$	0
$u = 0.913597 - 0.809553I$ $a = -0.285654 - 0.490373I$ $b = -0.86921 + 1.39950I$	$7.94883 + 3.03290I$	0
$u = 0.629450 + 0.446816I$ $a = 0.026130 - 0.904408I$ $b = -0.99443 + 1.41472I$	$-2.93325 - 4.48039I$	$-9.85243 + 10.13391I$
$u = 0.629450 - 0.446816I$ $a = 0.026130 + 0.904408I$ $b = -0.99443 - 1.41472I$	$-2.93325 + 4.48039I$	$-9.85243 - 10.13391I$
$u = 0.692510 + 0.288611I$ $a = 2.40204 + 0.20862I$ $b = 0.646277 + 0.227329I$	$-3.31554 + 1.59248I$	$-13.85520 + 2.64790I$
$u = 0.692510 - 0.288611I$ $a = 2.40204 - 0.20862I$ $b = 0.646277 - 0.227329I$	$-3.31554 - 1.59248I$	$-13.85520 - 2.64790I$
$u = -0.565001 + 0.454183I$ $a = -0.066232 + 0.868689I$ $b = -1.48274 - 1.36869I$	$1.49507 + 8.52247I$	$-6.0000 - 12.9551I$
$u = -0.565001 - 0.454183I$ $a = -0.066232 - 0.868689I$ $b = -1.48274 + 1.36869I$	$1.49507 - 8.52247I$	$-6.0000 + 12.9551I$
$u = -0.709761 + 0.020702I$ $a = 0.646694 - 1.140950I$ $b = -0.334689 + 0.046125I$	$0.51104 - 2.01003I$	$-2.20570 + 3.99950I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.709761-0.020702I$ $a=\ 0.646694+1.140950I$ $b=-0.334689-0.046125I$	$0.51104+2.01003I$	$-2.20570-3.99950I$
$u=\ 1.292070+0.003692I$ $a=\ 0.408255+0.744650I$ $b=\ 0.251664+0.213807I$	$2.52430+1.99992I$	0
$u=\ 1.292070-0.003692I$ $a=\ 0.408255-0.744650I$ $b=\ 0.251664-0.213807I$	$2.52430-1.99992I$	0
$u=\ 0.925904+0.944482I$ $a=\ 0.215413-1.215970I$ $b=\ 0.270846+0.684713I$	$8.96391-3.46153I$	0
$u=\ 0.925904-0.944482I$ $a=\ 0.215413+1.215970I$ $b=\ 0.270846-0.684713I$	$8.96391+3.46153I$	0
$u=-0.670949+0.083829I$ $a=\ 0.109150-1.101600I$ $b=\ 1.19113+1.28717I$	$-4.30679-2.27536I$	$-16.5563+2.4540I$
$u=-0.670949-0.083829I$ $a=\ 0.109150+1.101600I$ $b=\ 1.19113-1.28717I$	$-4.30679+2.27536I$	$-16.5563-2.4540I$
$u=-0.839735+1.028720I$ $a=-0.024893-0.614603I$ $b=-0.920321+1.054900I$	$3.83581+3.87716I$	0
$u=-0.839735-1.028720I$ $a=-0.024893+0.614603I$ $b=-0.920321-1.054900I$	$3.83581-3.87716I$	0
$u=\ 0.612225+1.199640I$ $a=-0.434189-0.108543I$ $b=\ 1.008350-0.099538I$	$-1.126070-0.317400I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.612225 - 1.199640I$ $a = -0.434189 + 0.108543I$ $b = 1.008350 + 0.099538I$	$-1.126070 + 0.317400I$	0
$u = -0.863786 + 1.085850I$ $a = 0.586086 - 0.198313I$ $b = -0.428910 - 0.311916I$	$-0.35681 - 2.79976I$	0
$u = -0.863786 - 1.085850I$ $a = 0.586086 + 0.198313I$ $b = -0.428910 + 0.311916I$	$-0.35681 + 2.79976I$	0
$u = -0.503079 + 0.267304I$ $a = -3.34209 + 1.22768I$ $b = -0.549342 + 0.188748I$	$-3.54083 + 3.55162I$	$-16.4796 - 10.7233I$
$u = -0.503079 - 0.267304I$ $a = -3.34209 - 1.22768I$ $b = -0.549342 - 0.188748I$	$-3.54083 - 3.55162I$	$-16.4796 + 10.7233I$
$u = 1.06471 + 0.98078I$ $a = 0.010866 + 1.078640I$ $b = -1.018890 - 0.794064I$	$-1.50860 - 6.81305I$	0
$u = 1.06471 - 0.98078I$ $a = 0.010866 - 1.078640I$ $b = -1.018890 + 0.794064I$	$-1.50860 + 6.81305I$	0
$u = -1.09605 + 0.97519I$ $a = -0.070271 + 0.951473I$ $b = 1.15125 - 1.11120I$	$-0.95392 + 10.39970I$	0
$u = -1.09605 - 0.97519I$ $a = -0.070271 - 0.951473I$ $b = 1.15125 + 1.11120I$	$-0.95392 - 10.39970I$	0
$u = -1.23789 + 0.80342I$ $a = 0.066354 + 0.929504I$ $b = 1.041570 - 0.765298I$	$-1.47341 + 1.29795I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.23789-0.80342I$ $a=\ 0.066354-0.929504I$ $b=\ 1.041570+0.765298I$	$-1.47341-1.29795I$	0
$u=\ 1.16995+0.90072I$ $a=-0.006807-0.942814I$ $b=\ 1.12371+0.95306I$	$-5.16019-5.88389I$	0
$u=\ 1.16995-0.90072I$ $a=-0.006807+0.942814I$ $b=\ 1.12371-0.95306I$	$-5.16019+5.88389I$	0
$u=\ 0.70125+1.31396I$ $a=\ 0.209393+0.604652I$ $b=-1.06478-1.01972I$	$7.55142-5.35757I$	0
$u=\ 0.70125-1.31396I$ $a=\ 0.209393-0.604652I$ $b=-1.06478+1.01972I$	$7.55142+5.35757I$	0
$u=-1.18191+0.99684I$ $a=-0.037548-1.016460I$ $b=-1.12549+0.95882I$	$-3.93658+12.48330I$	0
$u=-1.18191-0.99684I$ $a=-0.037548+1.016460I$ $b=-1.12549-0.95882I$	$-3.93658-12.48330I$	0
$u=-0.80028+1.33460I$ $a=\ 0.188249-0.910710I$ $b=-0.583389+0.702703I$	$8.95846+5.01025I$	0
$u=-0.80028-1.33460I$ $a=\ 0.188249+0.910710I$ $b=-0.583389-0.702703I$	$8.95846-5.01025I$	0
$u=\ 0.298583+0.277764I$ $a=-1.20840-1.79229I$ $b=-1.026940-0.385412I$	$6.40230-2.27863I$	$-0.89056+3.31839I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.298583 - 0.277764I$ $a = -1.20840 + 1.79229I$ $b = -1.026940 + 0.385412I$	$6.40230 + 2.27863I$	$-0.89056 - 3.31839I$
$u = 0.398620 + 0.060755I$ $a = 0.13074 + 1.54798I$ $b = 1.74001 - 1.00437I$	$-1.25022 - 1.15331I$	$-15.9982 + 3.4831I$
$u = 0.398620 - 0.060755I$ $a = 0.13074 - 1.54798I$ $b = 1.74001 + 1.00437I$	$-1.25022 + 1.15331I$	$-15.9982 - 3.4831I$
$u = 0.398550 + 0.050882I$ $a = -2.05034 + 3.97773I$ $b = -0.672123 - 0.119936I$	$-1.36735 - 2.11678I$	$-15.1062 + 0.7883I$
$u = 0.398550 - 0.050882I$ $a = -2.05034 - 3.97773I$ $b = -0.672123 + 0.119936I$	$-1.36735 + 2.11678I$	$-15.1062 - 0.7883I$
$u = 1.23465 + 1.03140I$ $a = -0.040428 + 0.975733I$ $b = -1.14414 - 1.10028I$	$1.3879 - 17.4955I$	0
$u = 1.23465 - 1.03140I$ $a = -0.040428 - 0.975733I$ $b = -1.14414 + 1.10028I$	$1.3879 + 17.4955I$	0
$u = -1.16076 + 1.57900I$ $a = -0.296277 - 0.026335I$ $b = 0.553572 + 0.338879I$	$-2.86751 - 3.88898I$	0
$u = -1.16076 - 1.57900I$ $a = -0.296277 + 0.026335I$ $b = 0.553572 - 0.338879I$	$-2.86751 + 3.88898I$	0
$u = 1.16470 + 1.57762I$ $a = 0.304904 + 0.157476I$ $b = -0.541884 + 0.107530I$	$-3.58768 - 2.35741I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.16470 - 1.57762I$ $a = 0.304904 - 0.157476I$ $b = -0.541884 - 0.107530I$	$-3.58768 + 2.35741I$	0
$u = -1.33827 + 1.50559I$ $a = 0.216380 - 0.253403I$ $b = -0.719339 + 0.135725I$	$0.67050 + 7.44603I$	0
$u = -1.33827 - 1.50559I$ $a = 0.216380 + 0.253403I$ $b = -0.719339 - 0.135725I$	$0.67050 - 7.44603I$	0
$u = 1.04952 + 1.76023I$ $a = -0.334642 + 0.135942I$ $b = 0.395360 - 0.575779I$	$2.69608 + 8.47155I$	0
$u = 1.04952 - 1.76023I$ $a = -0.334642 - 0.135942I$ $b = 0.395360 + 0.575779I$	$2.69608 - 8.47155I$	0

II. $I_2^u =$
$\langle 5u^{19}-6u^{18}+\cdots+2b-13,\ 4u^{19}-5u^{18}+\cdots+2a-3,\ u^{20}+3u^{18}+\cdots+5u^2+1\rangle$

(i) Arc colorings

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

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

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

$$a_6 = \begin{pmatrix} -2u^{19} + \frac{5}{2}u^{18} + \cdots - \frac{7}{2}u + \frac{3}{2} \\ -\frac{5}{2}u^{19} + 3u^{18} + \cdots - 4u + \frac{13}{2} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -5u^{19} + \frac{15}{2}u^{18} + \cdots - \frac{19}{2}u + \frac{21}{2} \\ -\frac{3}{2}u^{19} - 3u^{17} + \cdots - u + \frac{3}{2} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{9}{2}u^{19} + \frac{11}{2}u^{18} + \cdots - \frac{15}{2}u + 8 \\ -\frac{5}{2}u^{19} + 3u^{18} + \cdots - 4u + \frac{13}{2} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{3}{2}u^{19} + 2u^{18} + \cdots - 2u + \frac{7}{2} \\ u^{19} + 3u^{17} + \cdots - u^2 + 5u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{7}{2}u^{19} - \frac{3}{2}u^{18} + \cdots + \frac{7}{2}u + 3 \\ -u^{18} - 3u^{16} + \cdots + u - 5 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{11}{2}u^{19} - 5u^{18} + \cdots + 8u - \frac{7}{2} \\ -\frac{1}{2}u^{19} + u^{18} + \cdots - u - \frac{3}{2} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} \frac{11}{2}u^{19} + \frac{3}{2}u^{18} + \cdots + \frac{11}{2}u^2 + \frac{13}{2}u \\ \frac{21}{2}u^{19} + \frac{3}{2}u^{18} + \cdots + \frac{45}{2}u + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{7}{2}u^{19} - \frac{13}{2}u^{18} + \cdots - \frac{11}{2}u - 9 \\ 3u^{19} - \frac{13}{2}u^{18} + \cdots + \frac{5}{2}u - \frac{29}{2} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{19}{2}u^{19} - \frac{21}{2}u^{18} + \cdots + \frac{27}{2}u - 13 \\ \frac{7}{2}u^{19} - \frac{9}{2}u^{18} + \cdots + \frac{9}{2}u - 12 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= -36u^{19} - \frac{3}{2}u^{18} - \frac{181}{2}u^{17} + \frac{55}{2}u^{16} - \frac{555}{2}u^{15} + \frac{143}{2}u^{14} - \frac{641}{2}u^{13} + \frac{261}{2}u^{12} - 356u^{11} + 244u^{10} - 252u^9 + \frac{515}{2}u^8 - \frac{217}{2}u^7 + 195u^6 - \frac{377}{2}u^5 + \frac{109}{2}u^4 - \frac{407}{2}u^3 - \frac{51}{2}u^2 - \frac{133}{2}u - \frac{29}{2}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{12}	$u^{20} - 6u^{19} + \cdots - 4u + 1$
c_2	$u^{20} + 5u^{18} + \cdots + 3u^2 + 1$
c_3	$u^{20} + 3u^{18} + \cdots + 5u^2 + 1$
c_4	$u^{20} + 6u^{19} + \cdots + 4u + 1$
c_5	$u^{20} + 2u^{19} + \cdots + 5u + 1$
c_6	$u^{20} - 3u^{19} + \cdots - 22u + 7$
c_7	$u^{20} - 4u^{19} + \cdots - 4u + 1$
c_8	$u^{20} - 3u^{19} + \cdots - 8u + 7$
c_9	$u^{20} + 2u^{19} + \cdots + u^3 + 1$
c_{10}, c_{11}	$u^{20} + 4u^{19} + \cdots + 4u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{12}	$y^{20} + 12y^{19} + \cdots + 14y + 1$
c_2	$y^{20} + 10y^{19} + \cdots + 6y + 1$
c_3	$y^{20} + 6y^{19} + \cdots + 10y + 1$
c_5	$y^{20} + 22y^{18} + \cdots + 3y + 1$
c_6	$y^{20} + 5y^{19} + \cdots + 118y + 49$
c_7, c_{10}, c_{11}	$y^{20} + 22y^{19} + \cdots + 30y + 1$
c_8	$y^{20} + 9y^{19} + \cdots + 188y + 49$
c_9	$y^{20} - 2y^{19} + \cdots + 2y^2 + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.812253+0.473538I$ $a=\ 0.40490+1.57874I$ $b=\ 0.822438-0.775505I$	$0.74373+4.05917I$	$-2.82511-0.92977I$
$u=-0.812253-0.473538I$ $a=\ 0.40490-1.57874I$ $b=\ 0.822438+0.775505I$	$0.74373-4.05917I$	$-2.82511+0.92977I$
$u=\ 0.906722+0.243640I$ $a=\ 0.641070-1.213010I$ $b=\ 1.04129+1.08334I$	$3.46371-5.35086I$	$-2.37266+7.93016I$
$u=\ 0.906722-0.243640I$ $a=\ 0.641070+1.213010I$ $b=\ 1.04129-1.08334I$	$3.46371+5.35086I$	$-2.37266-7.93016I$
$u=\ 0.192281+0.880278I$ $a=-0.396919+0.625878I$ $b=-0.498840+0.507368I$	$1.91537-7.45410I$	$-2.80666+5.14772I$
$u=\ 0.192281-0.880278I$ $a=-0.396919-0.625878I$ $b=-0.498840-0.507368I$	$1.91537+7.45410I$	$-2.80666-5.14772I$
$u=-0.734190+0.823682I$ $a=-0.029249-0.671164I$ $b=-1.27215+1.29437I$	$7.51988+3.71646I$	$-0.19673-7.05119I$
$u=-0.734190-0.823682I$ $a=-0.029249+0.671164I$ $b=-1.27215-1.29437I$	$7.51988-3.71646I$	$-0.19673+7.05119I$
$u=-0.061191+0.846410I$ $a=-0.594260-0.639400I$ $b=\ 0.124196-0.469734I$	$-2.90766+2.92514I$	$-7.54786-3.63695I$
$u=-0.061191-0.846410I$ $a=-0.594260+0.639400I$ $b=\ 0.124196+0.469734I$	$-2.90766-2.92514I$	$-7.54786+3.63695I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.183312+0.749144I$ $a=-1.08852+1.23211I$ $b=\ \ 0.551678-0.088695I$	$-0.74515+2.10260I$	$-3.47918+3.64090I$
$u=-0.183312-0.749144I$ $a=-1.08852-1.23211I$ $b=\ \ 0.551678+0.088695I$	$-0.74515-2.10260I$	$-3.47918-3.64090I$
$u=\ \ 0.784188+0.983742I$ $a=-0.091190-1.352150I$ $b=\ \ 0.410802+0.663107I$	$8.70280-3.92804I$	$-1.94399+7.70721I$
$u=\ \ 0.784188-0.983742I$ $a=-0.091190+1.352150I$ $b=\ \ 0.410802-0.663107I$	$8.70280+3.92804I$	$-1.94399-7.70721I$
$u=\ \ 0.772112+1.011950I$ $a=-0.058185+0.742783I$ $b=-0.884281-1.057570I$	$4.21490-3.96613I$	$6.63586+5.76785I$
$u=\ \ 0.772112-1.011950I$ $a=-0.058185-0.742783I$ $b=-0.884281+1.057570I$	$4.21490+3.96613I$	$6.63586-5.76785I$
$u=\ \ 0.024765+0.703217I$ $a=-0.730633+0.187577I$ $b=\ \ 1.256050+0.516928I$	$-0.662120+1.113620I$	$-1.35328-4.61065I$
$u=\ \ 0.024765-0.703217I$ $a=-0.730633-0.187577I$ $b=\ \ 1.256050-0.516928I$	$-0.662120-1.113620I$	$-1.35328+4.61065I$
$u=-0.88912+1.26358I$ $a=-0.057015-0.819735I$ $b=-0.551188+1.009010I$	$10.65320+4.50722I$	$4.88959-4.33286I$
$u=-0.88912-1.26358I$ $a=-0.057015+0.819735I$ $b=-0.551188-1.009010I$	$10.65320-4.50722I$	$4.88959+4.33286I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{12}	$(u^{20} - 6u^{19} + \cdots - 4u + 1)(u^{85} + 5u^{84} + \cdots + 97u + 11)$
c_2	$(u^{20} + 5u^{18} + \cdots + 3u^2 + 1)(u^{85} - u^{84} + \cdots + 301u + 71)$
c_3	$(u^{20} + 3u^{18} + \cdots + 5u^2 + 1)(u^{85} + u^{84} + \cdots + 171u + 23)$
c_4	$(u^{20} + 6u^{19} + \cdots + 4u + 1)(u^{85} + 5u^{84} + \cdots + 97u + 11)$
c_5	$(u^{20} + 2u^{19} + \cdots + 5u + 1)(u^{85} - 3u^{84} + \cdots - 22u + 3)$
c_6	$(u^{20} - 3u^{19} + \cdots - 22u + 7)(u^{85} - 2u^{84} + \cdots + 54441u + 8717)$
c_7	$(u^{20} - 4u^{19} + \cdots - 4u + 1)(u^{85} + 3u^{84} + \cdots - 31u + 21)$
c_8	$(u^{20} - 3u^{19} + \cdots - 8u + 7)(u^{85} - 2u^{84} + \cdots - 4.31386 \times 10^7 u + 7230569)$
c_9	$(u^{20} + 2u^{19} + \cdots + u^3 + 1)(u^{85} - 5u^{84} + \cdots + 9u + 1)$
c_{10}, c_{11}	$(u^{20} + 4u^{19} + \cdots + 4u + 1)(u^{85} + 3u^{84} + \cdots - 31u + 21)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_{12}	$(y^{20}+12y^{19}+\cdots+14y+1)(y^{85}+31y^{84}+\cdots-4605y-121)$
c_2	$(y^{20}+10y^{19}+\cdots+6y+1)(y^{85}+25y^{84}+\cdots-1039577y-5041)$
c_3	$(y^{20}+6y^{19}+\cdots+10y+1)(y^{85}-3y^{84}+\cdots+25423y-529)$
c_5	$(y^{20}+22y^{18}+\cdots+3y+1)(y^{85}-5y^{84}+\cdots+454y-9)$
c_6	$(y^{20}+5y^{19}+\cdots+118y+49)$ $\cdot(y^{85}+32y^{84}+\cdots-3915581617y-75986089)$
c_7, c_{10}, c_{11}	$(y^{20}+22y^{19}+\cdots+30y+1)(y^{85}+73y^{84}+\cdots+247y-441)$
c_8	$(y^{20}+9y^{19}+\cdots+188y+49)$ $\cdot(y^{85}-24y^{84}+\cdots+583651994447037y-52281128063761)$
c_9	$(y^{20}-2y^{19}+\cdots+2y^2+1)(y^{85}+5y^{84}+\cdots+13y-1)$