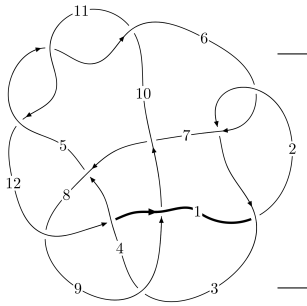
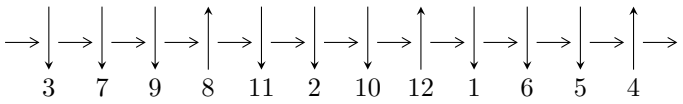
$12a_{0559}$ $(K12a_{0559})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -2.62320 \times 10^{287} u^{131} + 4.40473 \times 10^{287} u^{130} + \cdots + 3.61885 \times 10^{287} b + 1.06624 \times 10^{289}, \\ & - 2.63834 \times 10^{289} u^{131} + 5.53105 \times 10^{289} u^{130} + \cdots + 3.22078 \times 10^{289} a + 1.89383 \times 10^{291}, \\ & u^{132} - 2u^{131} + \cdots - 568u + 89 \rangle \\ I_2^u = \langle & u^{26} + u^{25} + \cdots + b - 3,\ u^{26} - u^{25} + \cdots + a - 4,\ u^{27} - u^{26} + \cdots - u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 159 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. $\boldsymbol{I_1^u = \langle -2.62 \times 10^{287} u^{131} + 4.40 \times 10^{287} u^{130} + \cdots + 3.62 \times 10^{287} b + 1.07 \times 10^{289},\ -2.64 \times 10^{289} u^{131} + 5.53 \times 10^{289} u^{130} + \cdots + 3.22 \times 10^{289} a + 1.89 \times 10^{291},\ u^{132} - 2u^{131} + \cdots - 568u + 89 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.819162u^{131} - 1.71730u^{130} + \cdots - 59.4863u - 58.8003 \\ 0.724872u^{131} - 1.21716u^{130} + \cdots + 89.8247u - 29.4635 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.161670u^{131} + 0.565376u^{130} + \cdots - 192.959u + 20.9352 \\ -1.16897u^{131} + 1.80579u^{130} + \cdots + 227.476u - 27.4721 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0942905u^{131} - 0.500140u^{130} + \cdots - 149.311u - 29.3368 \\ 0.724872u^{131} - 1.21716u^{130} + \cdots + 89.8247u - 29.4635 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.181553u^{131} - 1.14469u^{130} + \cdots - 695.765u + 80.9396 \\ -0.710908u^{131} + 2.82353u^{130} + \cdots - 208.303u + 36.9135 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.785751u^{131} + 0.104849u^{130} + \cdots - 302.478u - 82.3601 \\ -3.50233u^{131} + 7.09633u^{130} + \cdots + 998.390u - 103.373 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.203113u^{131} - 0.0820425u^{130} + \cdots + 102.209u - 54.2446 \\ -0.0191589u^{131} + 0.624928u^{130} + \cdots + 112.201u - 26.3748 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.439066u^{131} - 1.19115u^{130} + \cdots + 406.652u - 120.893 \\ 0.884407u^{131} - 1.78507u^{130} + \cdots - 213.423u + 18.7842 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 8.49058u^{131} - 24.4730u^{130} + \cdots + 488.947u - 51.1479$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{132} + 50u^{131} + \cdots + 410734u + 7921$
c_2, c_6	$u^{132} - 2u^{131} + \cdots - 568u + 89$
c_3	$u^{132} - 2u^{131} + \cdots + 29779u + 2021$
c_4	$u^{132} - 6u^{131} + \cdots - 1890u + 251$
c_5, c_{10}, c_{11}	$u^{132} + u^{131} + \cdots + 133u + 11$
c_7	$u^{132} + u^{131} + \cdots + 3639368u - 287749$
c_8	$u^{132} - 22u^{130} + \cdots + 185420u + 16129$
c_9	$u^{132} - 5u^{131} + \cdots - 4u - 1$
c_{12}	$u^{132} + 9u^{131} + \cdots + 72u + 11$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{132} + 74y^{131} + \cdots - 5025488686y + 62742241$
c_2, c_6	$y^{132} - 50y^{131} + \cdots - 410734y + 7921$
c_3	$y^{132} + 28y^{131} + \cdots - 150607255y + 4084441$
c_4	$y^{132} - 22y^{131} + \cdots - 2514888y + 63001$
c_5, c_{10}, c_{11}	$y^{132} + 147y^{131} + \cdots - 40855y + 121$
c_7	$y^{132} + 51y^{131} + \cdots - 2120861931094y + 82799487001$
c_8	$y^{132} - 44y^{131} + \cdots + 4699377698y + 260144641$
c_9	$y^{132} - 13y^{131} + \cdots + 8y + 1$
c_{12}	$y^{132} + 27y^{131} + \cdots + 6476y + 121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.994996 + 0.006480I$ $a = -1.74092 - 0.54070I$ $b = -0.471730 - 0.131016I$	$-4.62550 - 1.48283I$	0
$u = 0.994996 - 0.006480I$ $a = -1.74092 + 0.54070I$ $b = -0.471730 + 0.131016I$	$-4.62550 + 1.48283I$	0
$u = 0.634066 + 0.801263I$ $a = 0.634491 + 0.575872I$ $b = 0.13578 - 1.45796I$	$6.19734 + 4.07644I$	0
$u = 0.634066 - 0.801263I$ $a = 0.634491 - 0.575872I$ $b = 0.13578 + 1.45796I$	$6.19734 - 4.07644I$	0
$u = 0.515731 + 0.831149I$ $a = 0.404778 - 0.164401I$ $b = 0.051469 - 0.567679I$	$3.79838 + 2.24121I$	0
$u = 0.515731 - 0.831149I$ $a = 0.404778 + 0.164401I$ $b = 0.051469 + 0.567679I$	$3.79838 - 2.24121I$	0
$u = -0.752149 + 0.624524I$ $a = 1.90916 + 0.67170I$ $b = 0.034547 - 0.281824I$	$2.55140 - 1.93292I$	0
$u = -0.752149 - 0.624524I$ $a = 1.90916 - 0.67170I$ $b = 0.034547 + 0.281824I$	$2.55140 + 1.93292I$	0
$u = -0.668759 + 0.711722I$ $a = 0.808567 + 0.081701I$ $b = 0.589563 + 0.305614I$	$0.48044 - 1.66584I$	0
$u = -0.668759 - 0.711722I$ $a = 0.808567 - 0.081701I$ $b = 0.589563 - 0.305614I$	$0.48044 + 1.66584I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.570024+0.863514I$ $a=-0.222453-0.052071I$ $b=-0.734101-0.708592I$	$2.59743-8.93120I$	0
$u=-0.570024-0.863514I$ $a=-0.222453+0.052071I$ $b=-0.734101+0.708592I$	$2.59743+8.93120I$	0
$u=-0.360635+0.971464I$ $a=-0.0362939-0.0413371I$ $b=-0.403332+0.366839I$	$1.52321+4.62993I$	0
$u=-0.360635-0.971464I$ $a=-0.0362939+0.0413371I$ $b=-0.403332-0.366839I$	$1.52321-4.62993I$	0
$u=-0.904663+0.509921I$ $a=-0.826665-0.848051I$ $b=-0.535360-0.451714I$	$-1.89833+2.87175I$	0
$u=-0.904663-0.509921I$ $a=-0.826665+0.848051I$ $b=-0.535360+0.451714I$	$-1.89833-2.87175I$	0
$u=0.784767+0.682639I$ $a=1.132960-0.122173I$ $b=0.413696+0.801010I$	$1.94520-2.06908I$	0
$u=0.784767-0.682639I$ $a=1.132960+0.122173I$ $b=0.413696-0.801010I$	$1.94520+2.06908I$	0
$u=0.819759+0.645897I$ $a=-0.39488-1.50469I$ $b=0.01450+1.53948I$	$8.87156-6.85147I$	0
$u=0.819759-0.645897I$ $a=-0.39488+1.50469I$ $b=0.01450-1.53948I$	$8.87156+6.85147I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.822814+0.646545I$ $a=-1.53339-0.88035I$ $b=-0.966960+0.552965I$	$3.07535+5.04428I$	0
$u=-0.822814-0.646545I$ $a=-1.53339+0.88035I$ $b=-0.966960-0.552965I$	$3.07535-5.04428I$	0
$u=\ \ 0.565290+0.765188I$ $a=\ \ 0.054701+0.324447I$ $b=-0.693226+0.744308I$	$4.10966+0.92164I$	0
$u=\ \ 0.565290-0.765188I$ $a=\ \ 0.054701-0.324447I$ $b=-0.693226-0.744308I$	$4.10966-0.92164I$	0
$u=-1.04902$ $a=\ \ 1.07199$ $b=\ \ 0.691178$	-1.61809	0
$u=\ \ 0.868569+0.386574I$ $a=-1.76217+0.96278I$ $b=-0.172034-0.799347I$	$-2.84775-1.60335I$	0
$u=\ \ 0.868569-0.386574I$ $a=-1.76217-0.96278I$ $b=-0.172034+0.799347I$	$-2.84775+1.60335I$	0
$u=\ \ 0.772456+0.715664I$ $a=\ \ 0.742267-0.744997I$ $b=-0.067281+0.621184I$	$2.35190-2.68342I$	0
$u=\ \ 0.772456-0.715664I$ $a=\ \ 0.742267+0.744997I$ $b=-0.067281-0.621184I$	$2.35190+2.68342I$	0
$u=\ \ 0.771908+0.729236I$ $a=-0.053680+0.255973I$ $b=\ \ 0.26793-1.61185I$	$10.54430+4.25109I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.771908 - 0.729236I$ $a = -0.053680 - 0.255973I$ $b = 0.26793 + 1.61185I$	$10.54430 - 4.25109I$	0
$u = -1.064160 + 0.060889I$ $a = 1.55659 - 0.12062I$ $b = 0.771807 - 0.677807I$	$-3.49156 - 2.47310I$	0
$u = -1.064160 - 0.060889I$ $a = 1.55659 + 0.12062I$ $b = 0.771807 + 0.677807I$	$-3.49156 + 2.47310I$	0
$u = -0.857199 + 0.640093I$ $a = -1.009080 - 0.133591I$ $b = 0.25723 + 1.85429I$	$7.67912 + 1.97784I$	0
$u = -0.857199 - 0.640093I$ $a = -1.009080 + 0.133591I$ $b = 0.25723 - 1.85429I$	$7.67912 - 1.97784I$	0
$u = -0.856401 + 0.642335I$ $a = -2.13306 - 0.42776I$ $b = -0.36336 + 1.80298I$	$7.68137 + 3.02430I$	0
$u = -0.856401 - 0.642335I$ $a = -2.13306 + 0.42776I$ $b = -0.36336 - 1.80298I$	$7.68137 - 3.02430I$	0
$u = -0.880379 + 0.638494I$ $a = 0.436321 + 0.517027I$ $b = 0.885433 + 0.705363I$	$2.89468 - 0.02986I$	0
$u = -0.880379 - 0.638494I$ $a = 0.436321 - 0.517027I$ $b = 0.885433 - 0.705363I$	$2.89468 + 0.02986I$	0
$u = -1.069670 + 0.201549I$ $a = -0.918165 - 1.030270I$ $b = -0.356229 - 0.381280I$	$-3.90078 - 0.34266I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.069670-0.201549I$ $a=-0.918165+1.030270I$ $b=-0.356229+0.381280I$	$-3.90078+0.34266I$	0
$u=0.883959+0.638258I$ $a=0.454032-0.216708I$ $b=0.022800+0.763237I$	$2.08747-2.56816I$	0
$u=0.883959-0.638258I$ $a=0.454032+0.216708I$ $b=0.022800-0.763237I$	$2.08747+2.56816I$	0
$u=-1.090650+0.093406I$ $a=-1.14572+1.64113I$ $b=-0.099797+1.342850I$	$-0.01929+3.49571I$	0
$u=-1.090650-0.093406I$ $a=-1.14572-1.64113I$ $b=-0.099797-1.342850I$	$-0.01929-3.49571I$	0
$u=0.893330+0.649841I$ $a=2.99081-0.53235I$ $b=0.00730+1.48977I$	$8.63942+1.80321I$	0
$u=0.893330-0.649841I$ $a=2.99081+0.53235I$ $b=0.00730-1.48977I$	$8.63942-1.80321I$	0
$u=-0.791276+0.772968I$ $a=0.534673+0.705186I$ $b=-0.00970-1.58542I$	$10.14180+2.60358I$	0
$u=-0.791276-0.772968I$ $a=0.534673-0.705186I$ $b=-0.00970+1.58542I$	$10.14180-2.60358I$	0
$u=0.610674+0.649425I$ $a=-0.793420+1.044120I$ $b=-0.990122-0.247008I$	$1.23734+3.50615I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.610674 - 0.649425I$ $a = -0.793420 - 1.044120I$ $b = -0.990122 + 0.247008I$	$1.23734 - 3.50615I$	0
$u = -0.940716 + 0.613817I$ $a = -0.712349 + 0.771670I$ $b = -0.042375 - 0.473375I$	$1.95733 + 6.81025I$	0
$u = -0.940716 - 0.613817I$ $a = -0.712349 - 0.771670I$ $b = -0.042375 + 0.473375I$	$1.95733 - 6.81025I$	0
$u = 0.916598 + 0.667748I$ $a = -0.090668 + 0.660853I$ $b = -0.399787 + 0.923608I$	$1.54193 - 3.15243I$	0
$u = 0.916598 - 0.667748I$ $a = -0.090668 - 0.660853I$ $b = -0.399787 - 0.923608I$	$1.54193 + 3.15243I$	0
$u = -1.060320 + 0.411733I$ $a = 0.725968 + 0.184398I$ $b = 0.561074 - 0.066298I$	$-1.75667 + 0.49068I$	0
$u = -1.060320 - 0.411733I$ $a = 0.725968 - 0.184398I$ $b = 0.561074 + 0.066298I$	$-1.75667 - 0.49068I$	0
$u = -0.862337 + 0.746269I$ $a = 1.10193 + 1.14638I$ $b = 0.01425 - 1.58401I$	$9.98298 + 2.82606I$	0
$u = -0.862337 - 0.746269I$ $a = 1.10193 - 1.14638I$ $b = 0.01425 + 1.58401I$	$9.98298 - 2.82606I$	0
$u = 0.618325 + 0.966155I$ $a = -0.151389 - 0.572052I$ $b = -0.24136 + 1.59831I$	$10.2195 + 12.5934I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.618325 - 0.966155I$ $a = -0.151389 + 0.572052I$ $b = -0.24136 - 1.59831I$	$10.2195 - 12.5934I$	0
$u = -0.848464 + 0.077844I$ $a = -0.21096 + 3.29126I$ $b = -0.16663 + 1.42045I$	$5.59934 + 5.71675I$	0
$u = -0.848464 - 0.077844I$ $a = -0.21096 - 3.29126I$ $b = -0.16663 - 1.42045I$	$5.59934 - 5.71675I$	0
$u = 1.005330 + 0.564689I$ $a = -1.77666 + 0.33734I$ $b = -0.559377 - 0.541615I$	$-1.62372 - 6.68253I$	0
$u = 1.005330 - 0.564689I$ $a = -1.77666 - 0.33734I$ $b = -0.559377 + 0.541615I$	$-1.62372 + 6.68253I$	0
$u = -0.816595 + 0.161996I$ $a = -2.65788 + 0.25450I$ $b = -0.145940 + 1.183650I$	$-1.54149 + 0.68168I$	0
$u = -0.816595 - 0.161996I$ $a = -2.65788 - 0.25450I$ $b = -0.145940 - 1.183650I$	$-1.54149 - 0.68168I$	0
$u = 0.935862 + 0.699498I$ $a = -2.21328 + 0.14497I$ $b = -0.32179 - 1.57803I$	$10.04390 - 9.70702I$	0
$u = 0.935862 - 0.699498I$ $a = -2.21328 - 0.14497I$ $b = -0.32179 + 1.57803I$	$10.04390 + 9.70702I$	0
$u = -0.634146 + 0.985622I$ $a = 0.084459 + 0.505395I$ $b = -0.22551 - 1.58250I$	$11.70150 - 4.34034I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.634146-0.985622I$ $a=\ \ 0.084459-0.505395I$ $b=-0.22551+1.58250I$	$11.70150+4.34034I$	0
$u=-0.920415+0.726208I$ $a=\ \ 1.75168+0.54157I$ $b=\ \ 0.04906-1.54453I$	$9.75071+3.05257I$	0
$u=-0.920415-0.726208I$ $a=\ \ 1.75168-0.54157I$ $b=\ \ 0.04906+1.54453I$	$9.75071-3.05257I$	0
$u=-0.550360+1.043380I$ $a=\ \ 0.058196-0.472313I$ $b=\ \ 0.01923+1.53496I$	$10.84940-2.52048I$	0
$u=-0.550360-1.043380I$ $a=\ \ 0.058196+0.472313I$ $b=\ \ 0.01923-1.53496I$	$10.84940+2.52048I$	0
$u=\ \ 1.186540+0.094281I$ $a=\ \ 1.322460+0.412756I$ $b=\ \ 0.747039+0.446078I$	$-4.08907-7.51792I$	0
$u=\ \ 1.186540-0.094281I$ $a=\ \ 1.322460-0.412756I$ $b=\ \ 0.747039-0.446078I$	$-4.08907+7.51792I$	0
$u=\ \ 1.008060+0.637246I$ $a=\ \ 0.699716-0.829854I$ $b=\ \ 1.100490-0.415405I$	$0.07070-8.57861I$	0
$u=\ \ 1.008060-0.637246I$ $a=\ \ 0.699716+0.829854I$ $b=\ \ 1.100490+0.415405I$	$0.07070+8.57861I$	0
$u=-0.992211+0.669153I$ $a=-1.41520-0.58729I$ $b=-0.634108+0.248789I$	$-0.48526+6.98577I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.992211-0.669153I$ $a=-1.41520+0.58729I$ $b=-0.634108-0.248789I$	$-0.48526-6.98577I$	0
$u=0.363034+0.711070I$ $a=0.578080-0.413653I$ $b=-0.04916+1.43592I$	$4.69090-1.42629I$	0
$u=0.363034-0.711070I$ $a=0.578080+0.413653I$ $b=-0.04916-1.43592I$	$4.69090+1.42629I$	0
$u=0.728610+0.293527I$ $a=0.902833+0.437624I$ $b=0.417664-0.606910I$	$-0.22605+2.50968I$	0
$u=0.728610-0.293527I$ $a=0.902833-0.437624I$ $b=0.417664+0.606910I$	$-0.22605-2.50968I$	0
$u=0.194079+1.201040I$ $a=-0.121857+0.524657I$ $b=-0.11940-1.48554I$	$7.67886-6.48707I$	0
$u=0.194079-1.201040I$ $a=-0.121857-0.524657I$ $b=-0.11940+1.48554I$	$7.67886+6.48707I$	0
$u=1.125170+0.465251I$ $a=1.112720+0.521304I$ $b=0.209271+1.325500I$	$2.42090-3.32864I$	0
$u=1.125170-0.465251I$ $a=1.112720-0.521304I$ $b=0.209271-1.325500I$	$2.42090+3.32864I$	0
$u=-1.056440+0.608885I$ $a=-2.47896+0.30344I$ $b=-0.16650+1.54399I$	$5.32474+9.30599I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.056440-0.608885I$ $a=-2.47896-0.30344I$ $b=-0.16650-1.54399I$	$5.32474-9.30599I$	0
$u=1.207290+0.185289I$ $a=-0.02766+1.65031I$ $b=-0.08721+1.50203I$	$2.40715+1.84212I$	0
$u=1.207290-0.185289I$ $a=-0.02766-1.65031I$ $b=-0.08721-1.50203I$	$2.40715-1.84212I$	0
$u=1.037550+0.662023I$ $a=1.35614-0.48994I$ $b=0.924834+0.683729I$	$2.72984-6.32741I$	0
$u=1.037550-0.662023I$ $a=1.35614+0.48994I$ $b=0.924834-0.683729I$	$2.72984+6.32741I$	0
$u=-0.959303+0.789163I$ $a=-0.397598-0.522486I$ $b=-0.101230+0.195264I$	$-0.18630+3.08030I$	0
$u=-0.959303-0.789163I$ $a=-0.397598+0.522486I$ $b=-0.101230-0.195264I$	$-0.18630-3.08030I$	0
$u=1.030710+0.697830I$ $a=-2.42414+0.08943I$ $b=-0.17012-1.44439I$	$5.00651-9.72305I$	0
$u=1.030710-0.697830I$ $a=-2.42414-0.08943I$ $b=-0.17012+1.44439I$	$5.00651+9.72305I$	0
$u=0.716992+0.124023I$ $a=0.92913+2.53825I$ $b=-0.23110+1.45080I$	$5.15288-0.10023I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.716992 - 0.124023I$ $a = 0.92913 - 2.53825I$ $b = -0.23110 - 1.45080I$	$5.15288 + 0.10023I$	0
$u = 1.083560 + 0.675466I$ $a = -1.100260 - 0.103386I$ $b = -0.230811 - 0.496578I$	$2.11983 - 7.86879I$	0
$u = 1.083560 - 0.675466I$ $a = -1.100260 + 0.103386I$ $b = -0.230811 + 0.496578I$	$2.11983 + 7.86879I$	0
$u = -1.074050 + 0.695541I$ $a = 1.46630 + 0.54550I$ $b = 0.834487 - 0.713525I$	$1.0717 + 14.7171I$	0
$u = -1.074050 - 0.695541I$ $a = 1.46630 - 0.54550I$ $b = 0.834487 + 0.713525I$	$1.0717 - 14.7171I$	0
$u = -1.28440$ $a = -0.185699$ $b = 0.0492019$	-2.37235	0
$u = 0.676925 + 0.208900I$ $a = 1.124060 + 0.811472I$ $b = 0.04493 + 1.65565I$	$5.40133 - 1.09492I$	0
$u = 0.676925 - 0.208900I$ $a = 1.124060 - 0.811472I$ $b = 0.04493 - 1.65565I$	$5.40133 + 1.09492I$	0
$u = -1.280300 + 0.220518I$ $a = 0.983356 - 0.977949I$ $b = 0.23398 - 1.48521I$	$2.15856 + 11.02100I$	0
$u = -1.280300 - 0.220518I$ $a = 0.983356 + 0.977949I$ $b = 0.23398 + 1.48521I$	$2.15856 - 11.02100I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.348525+0.590263I$ $a=\ 0.771766-0.351389I$ $b=\ 0.12831+1.55884I$	$7.05598-4.45947I$	$-6.00000+2.49012I$
$u=-0.348525-0.590263I$ $a=\ 0.771766+0.351389I$ $b=\ 0.12831-1.55884I$	$7.05598+4.45947I$	$-6.00000-2.49012I$
$u=\ 1.101350+0.749789I$ $a=\ 1.95655-0.19479I$ $b=\ 0.27540+1.60963I$	$8.7049-18.8638I$	0
$u=\ 1.101350-0.749789I$ $a=\ 1.95655+0.19479I$ $b=\ 0.27540-1.60963I$	$8.7049+18.8638I$	0
$u=-1.095040+0.762225I$ $a=\ 1.72771+0.19647I$ $b=\ 0.28314-1.60368I$	$10.2481+10.6947I$	0
$u=-1.095040-0.762225I$ $a=\ 1.72771-0.19647I$ $b=\ 0.28314+1.60368I$	$10.2481-10.6947I$	0
$u=-0.526860+0.369790I$ $a=\ 1.258800-0.534568I$ $b=\ 0.12425+1.56373I$	$7.07452-4.51449I$	$-8.15922+1.95555I$
$u=-0.526860-0.369790I$ $a=\ 1.258800+0.534568I$ $b=\ 0.12425-1.56373I$	$7.07452+4.51449I$	$-8.15922-1.95555I$
$u=\ 1.000410+0.919179I$ $a=-0.958444+0.741591I$ $b=-0.02560-1.46902I$	$5.55658-3.49041I$	0
$u=\ 1.000410-0.919179I$ $a=-0.958444-0.741591I$ $b=-0.02560+1.46902I$	$5.55658+3.49041I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.154000+0.753313I$ $a=-1.55954+0.09926I$ $b=-0.07285+1.52892I$	$8.95938+8.99501I$	0
$u=-1.154000-0.753313I$ $a=-1.55954-0.09926I$ $b=-0.07285-1.52892I$	$8.95938-8.99501I$	0
$u=1.150290+0.779742I$ $a=0.933928-0.190095I$ $b=0.236000+1.223090I$	$2.04431-3.59566I$	0
$u=1.150290-0.779742I$ $a=0.933928+0.190095I$ $b=0.236000-1.223090I$	$2.04431+3.59566I$	0
$u=0.338566+0.442940I$ $a=0.892402-0.007273I$ $b=0.447394-0.581047I$	$-0.14721+2.37366I$	$-6.39573-4.68155I$
$u=0.338566-0.442940I$ $a=0.892402+0.007273I$ $b=0.447394+0.581047I$	$-0.14721-2.37366I$	$-6.39573+4.68155I$
$u=1.43728+0.21546I$ $a=-0.377583-0.812593I$ $b=0.04929-1.42523I$	$2.52245+0.50257I$	0
$u=1.43728-0.21546I$ $a=-0.377583+0.812593I$ $b=0.04929+1.42523I$	$2.52245-0.50257I$	0
$u=-0.316533+0.351504I$ $a=1.022650-0.014973I$ $b=0.404679-0.316331I$	$-0.902307+0.691481I$	$-8.09755-4.83373I$
$u=-0.316533-0.351504I$ $a=1.022650+0.014973I$ $b=0.404679+0.316331I$	$-0.902307-0.691481I$	$-8.09755+4.83373I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.314071 + 0.042498I$		
$a = -0.89991 + 4.02084I$	$0.75055 + 3.16921I$	$-9.99878 - 2.77340I$
$b = -0.572934 + 0.019706I$		
$u = \quad 0.314071 - 0.042498I$		
$a = -0.89991 - 4.02084I$	$0.75055 - 3.16921I$	$-9.99878 + 2.77340I$
$b = -0.572934 - 0.019706I$		

II.

$\boldsymbol{I_2^u = \langle u^{26}+u^{25}+\cdots+b-3,\ u^{26}-u^{25}+\cdots+a-4,\ u^{27}-u^{26}+\cdots-u+1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^{26}+u^{25}+\cdots-4u+4 \\ -u^{26}-u^{25}+\cdots+3u+3 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 3u^{26}-2u^{25}+\cdots+5u-5 \\ -2u^{26}+16u^{24}+\cdots+8u-6 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2u^{25}-3u^{24}+\cdots-7u+1 \\ -u^{26}-u^{25}+\cdots+3u+3 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5-u^3+u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -5u^{26}+6u^{25}+\cdots+11u-2 \\ 5u^{26}-3u^{25}+\cdots-5u+3 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2u^{26}+5u^{25}+\cdots-2u-5 \\ u^{24}-6u^{23}+\cdots+u-9 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^{26}-2u^{25}+\cdots+6u+4 \\ 4u^{26}-3u^{25}+\cdots+4u-2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{26}+6u^{24}+\cdots-4u+4 \\ -u^{26}-u^{25}+\cdots+3u+3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 20u^{26}-23u^{25}-108u^{24}+147u^{23}+321u^{22}-491u^{21}-648u^{20}+1098u^{19}+896u^{18}-1787u^{17}-859u^{16}+2244u^{15}+445u^{14}-2209u^{13}+114u^{12}+1728u^{11}-459u^{10}-1053u^9+524u^8+485u^7-354u^6-145u^5+176u^4+22u^3-62u^2+15u+9$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{27} - 13u^{26} + \cdots + 9u - 1$
c_2	$u^{27} + u^{26} + \cdots - u - 1$
c_3	$u^{27} + u^{26} + \cdots - 13u^2 - 1$
c_4	$u^{27} + u^{26} + \cdots + 3u - 1$
c_5	$u^{27} + 18u^{25} + \cdots + 2u + 1$
c_6	$u^{27} - u^{26} + \cdots - u + 1$
c_7	$u^{27} - 8u^{26} + \cdots + 33u - 5$
c_8	$u^{27} - u^{26} + \cdots - 11u + 1$
c_9	$u^{27} + 8u^{26} + \cdots - u - 1$
c_{10}, c_{11}	$u^{27} + 18u^{25} + \cdots + 2u - 1$
c_{12}	$u^{27} + 8u^{25} + \cdots + 3u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{27} + 11y^{26} + \cdots - 15y - 1$
c_2, c_6	$y^{27} - 13y^{26} + \cdots + 9y - 1$
c_3	$y^{27} + y^{26} + \cdots - 26y - 1$
c_4	$y^{27} - 5y^{26} + \cdots - 9y - 1$
c_5, c_{10}, c_{11}	$y^{27} + 36y^{26} + \cdots + 6y - 1$
c_7	$y^{27} + 16y^{26} + \cdots + 129y - 25$
c_8	$y^{27} - 11y^{26} + \cdots + 29y - 1$
c_9	$y^{27} - 12y^{26} + \cdots - y - 1$
c_{12}	$y^{27} + 16y^{26} + \cdots - 13y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.853162+0.647554I$ $a=\ 1.60649+0.40550I$ $b=\ 0.06284-1.87341I$	$7.92917+2.52291I$	$5.44822-2.75445I$
$u=-0.853162-0.647554I$ $a=\ 1.60649-0.40550I$ $b=\ 0.06284+1.87341I$	$7.92917-2.52291I$	$5.44822+2.75445I$
$u=\ 0.690991+0.599345I$ $a=\ 1.26985-0.79580I$ $b=\ 0.577860-0.201671I$	$1.76425+2.24141I$	$-4.36534-3.63893I$
$u=\ 0.690991-0.599345I$ $a=\ 1.26985+0.79580I$ $b=\ 0.577860+0.201671I$	$1.76425-2.24141I$	$-4.36534+3.63893I$
$u=-0.907772+0.081189I$ $a=-1.61468-0.76782I$ $b=-0.185070-0.462746I$	$-3.60291+0.41304I$	$-11.57818-1.36351I$
$u=-0.907772-0.081189I$ $a=-1.61468+0.76782I$ $b=-0.185070+0.462746I$	$-3.60291-0.41304I$	$-11.57818+1.36351I$
$u=\ 0.860452+0.284653I$ $a=-2.21496+0.10691I$ $b=-0.067024-1.149030I$	$-1.31757-1.24036I$	$-4.75718+7.10504I$
$u=\ 0.860452-0.284653I$ $a=-2.21496-0.10691I$ $b=-0.067024+1.149030I$	$-1.31757+1.24036I$	$-4.75718-7.10504I$
$u=-0.881088+0.664586I$ $a=\ 0.324729-0.741806I$ $b=-0.084591-0.903810I$	$0.92350+2.58995I$	$-9.68822-1.59614I$
$u=-0.881088-0.664586I$ $a=\ 0.324729+0.741806I$ $b=-0.084591+0.903810I$	$0.92350-2.58995I$	$-9.68822+1.59614I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.581553+0.606085I$ $a=\ \ 0.936509+0.087615I$ $b=\ \ 0.13865+1.52061I$	$7.88049-4.56272I$	$2.69007+4.12541I$
$u=-0.581553-0.606085I$ $a=\ \ 0.936509-0.087615I$ $b=\ \ 0.13865-1.52061I$	$7.88049+4.56272I$	$2.69007-4.12541I$
$u=\ \ 0.998416+0.622921I$ $a=-1.170550+0.123135I$ $b=-0.602644-0.092277I$	$0.77074-7.11436I$	$-5.64722+8.51652I$
$u=\ \ 0.998416-0.622921I$ $a=-1.170550-0.123135I$ $b=-0.602644+0.092277I$	$0.77074+7.11436I$	$-5.64722-8.51652I$
$u=-0.544832+0.591498I$ $a=-0.211003+1.089280I$ $b=\ \ 0.380251-0.301214I$	$1.44545+3.80748I$	$-3.49928-7.07651I$
$u=-0.544832-0.591498I$ $a=-0.211003-1.089280I$ $b=\ \ 0.380251+0.301214I$	$1.44545-3.80748I$	$-3.49928+7.07651I$
$u=-1.058170+0.636584I$ $a=-2.31607+0.47367I$ $b=-0.15867+1.48807I$	$6.39102+9.58868I$	$-0.19098-9.12583I$
$u=-1.058170-0.636584I$ $a=-2.31607-0.47367I$ $b=-0.15867-1.48807I$	$6.39102-9.58868I$	$-0.19098+9.12583I$
$u=\ \ 0.358678+0.668768I$ $a=-0.466956-1.003350I$ $b=\ \ 0.09089+1.52043I$	$7.80779-5.30819I$	$-0.97544+5.25547I$
$u=\ \ 0.358678-0.668768I$ $a=-0.466956+1.003350I$ $b=\ \ 0.09089-1.52043I$	$7.80779+5.30819I$	$-0.97544-5.25547I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.272990 + 0.067492I$ $a = -0.202479 + 1.295350I$ $b = -0.09327 + 1.47851I$	$2.87532 + 1.48837I$	$-1.94624 - 0.78086I$
$u = \quad 1.272990 - 0.067492I$ $a = -0.202479 - 1.295350I$ $b = -0.09327 - 1.47851I$	$2.87532 - 1.48837I$	$-1.94624 + 0.78086I$
$u = \quad 0.643418 + 0.315625I$ $a = -0.90111 - 1.47679I$ $b = \quad 0.25720 - 1.63028I$	$5.82969 - 0.19887I$	$5.14442 + 0.15970I$
$u = \quad 0.643418 - 0.315625I$ $a = -0.90111 + 1.47679I$ $b = \quad 0.25720 + 1.63028I$	$5.82969 + 0.19887I$	$5.14442 - 0.15970I$
$u = -1.29873$ $a = -0.455393$ $b = -0.308005$	-2.53411	-32.0090
$u = \quad 1.15100 + 0.87136I$ $a = -0.812079 + 0.232272I$ $b = -0.162421 - 1.187370I$	$2.04853 - 3.82771I$	$-6.6304 + 23.0923I$
$u = \quad 1.15100 - 0.87136I$ $a = -0.812079 - 0.232272I$ $b = -0.162421 + 1.187370I$	$2.04853 + 3.82771I$	$-6.6304 - 23.0923I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{27}-13u^{26}+\cdots+9u-1)(u^{132}+50u^{131}+\cdots+410734u+7921)$
c_2	$(u^{27}+u^{26}+\cdots-u-1)(u^{132}-2u^{131}+\cdots-568u+89)$
c_3	$(u^{27}+u^{26}+\cdots-13u^2-1)(u^{132}-2u^{131}+\cdots+29779u+2021)$
c_4	$(u^{27}+u^{26}+\cdots+3u-1)(u^{132}-6u^{131}+\cdots-1890u+251)$
c_5	$(u^{27}+18u^{25}+\cdots+2u+1)(u^{132}+u^{131}+\cdots+133u+11)$
c_6	$(u^{27}-u^{26}+\cdots-u+1)(u^{132}-2u^{131}+\cdots-568u+89)$
c_7	$(u^{27}-8u^{26}+\cdots+33u-5)(u^{132}+u^{131}+\cdots+3639368u-287749)$
c_8	$(u^{27}-u^{26}+\cdots-11u+1)(u^{132}-22u^{130}+\cdots+185420u+16129)$
c_9	$(u^{27}+8u^{26}+\cdots-u-1)(u^{132}-5u^{131}+\cdots-4u-1)$
c_{10}, c_{11}	$(u^{27}+18u^{25}+\cdots+2u-1)(u^{132}+u^{131}+\cdots+133u+11)$
c_{12}	$(u^{27}+8u^{25}+\cdots+3u-1)(u^{132}+9u^{131}+\cdots+72u+11)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{27}+11y^{26}+\cdots-15y-1)$ $\cdot(y^{132}+74y^{131}+\cdots-5025488686y+62742241)$
c_2, c_6	$(y^{27}-13y^{26}+\cdots+9y-1)(y^{132}-50y^{131}+\cdots-410734y+7921)$
c_3	$(y^{27}+y^{26}+\cdots-26y-1)$ $\cdot(y^{132}+28y^{131}+\cdots-150607255y+4084441)$
c_4	$(y^{27}-5y^{26}+\cdots-9y-1)(y^{132}-22y^{131}+\cdots-2514888y+63001)$
c_5, c_{10}, c_{11}	$(y^{27}+36y^{26}+\cdots+6y-1)(y^{132}+147y^{131}+\cdots-40855y+121)$
c_7	$(y^{27}+16y^{26}+\cdots+129y-25)$ $\cdot(y^{132}+51y^{131}+\cdots-2120861931094y+82799487001)$
c_8	$(y^{27}-11y^{26}+\cdots+29y-1)$ $\cdot(y^{132}-44y^{131}+\cdots+4699377698y+260144641)$
c_9	$(y^{27}-12y^{26}+\cdots-y-1)(y^{132}-13y^{131}+\cdots+8y+1)$
c_{12}	$(y^{27}+16y^{26}+\cdots-13y-1)(y^{132}+27y^{131}+\cdots+6476y+121)$