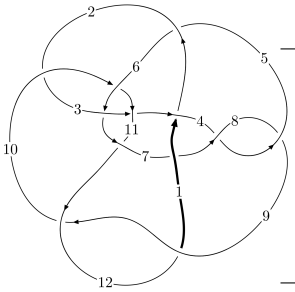
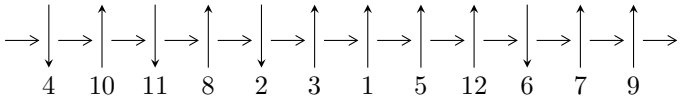
$12a_{1187}$ $(K12a_{1187})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.43694 \times 10^{1247} u^{202} + 6.99654 \times 10^{1246} u^{201} + \cdots + 2.59373 \times 10^{1248} b - 4.94103 \times 10^{1250},$$
$$2.06789 \times 10^{1251} u^{202} + 4.73176 \times 10^{1250} u^{201} + \cdots + 1.89887 \times 10^{1252} a + 5.27296 \times 10^{1254},$$
$$u^{203} + 2u^{202} + \cdots - 80511u - 7321\rangle$$
$$I_2^u = \langle 1.31314 \times 10^{60} u^{49} + 1.32815 \times 10^{60} u^{48} + \cdots + 7.86550 \times 10^{58} b + 6.20943 \times 10^{59},$$
$$- 1.47583 \times 10^{60} u^{49} - 1.56407 \times 10^{60} u^{48} + \cdots + 7.86550 \times 10^{58} a - 7.12810 \times 10^{59},\ u^{50} + u^{49} + \cdots - u + 1$$
$$I_3^u = \langle 2b - 3,\ 2a + 5,\ u - 1\rangle$$
$$I_4^u = \langle b,\ a + 1,\ u - 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 255 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. $\boldsymbol{I_1^u = \langle 1.44 \times 10^{1247} u^{202} + 7.00 \times 10^{1246} u^{201} + \cdots + 2.59 \times 10^{1248} b - 4.94 \times 10^{1250},\ 2.07 \times 10^{1251} u^{202} + 4.73 \times 10^{1250} u^{201} + \cdots + 1.90 \times 10^{1252} a + 5.27 \times 10^{1254},\ u^{203} + 2u^{202} + \cdots - 80511u - 7321 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -0.108901u^{202} - 0.0249188u^{201} + \cdots - 1382.26u - 277.689 \\ -0.0554007u^{202} - 0.0269748u^{201} + \cdots + 2118.49u + 190.499 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.242892u^{202} + 0.297981u^{201} + \cdots - 22457.6u - 2303.48 \\ -0.407194u^{202} - 0.349875u^{201} + \cdots + 23193.8u + 2216.29 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.205842u^{202} + 0.222492u^{201} + \cdots - 20845.4u - 2152.38 \\ -0.562734u^{202} - 0.554116u^{201} + \cdots + 41834.2u + 4150.50 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.408983u^{202} - 0.416467u^{201} + \cdots + 27287.1u + 2750.97 \\ 0.227279u^{202} + 0.265027u^{201} + \cdots - 17597.8u - 1856.07 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.200303u^{202} + 0.240294u^{201} + \cdots - 18232.7u - 1880.28 \\ -0.433780u^{202} - 0.408627u^{201} + \cdots + 28290.9u + 2776.24 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.355570u^{202} + 0.433197u^{201} + \cdots - 31605.2u - 3205.28 \\ 0.759767u^{202} + 0.907805u^{201} + \cdots - 65585.9u - 6627.87 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.63450u^{202} - 1.74050u^{201} + \cdots + 124864.u + 12504.6 \\ 1.60647u^{202} + 1.79540u^{201} + \cdots - 129709.u - 13101.6 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.321269u^{202} + 0.329106u^{201} + \cdots - 22483.3u - 2240.10 \\ 0.389626u^{202} + 0.455494u^{201} + \cdots - 31040.9u - 3095.52 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -12.4193u^{202} - 15.9063u^{201} + \cdots + 1.19388 \times 10^6 u + 123342.$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{203}+10u^{202}+\cdots-1413591u+4819$
c_2	$u^{203}+3u^{202}+\cdots+62u+1$
c_3	$u^{203}+u^{202}+\cdots-274u+16$
c_4, c_8	$u^{203}-2u^{202}+\cdots-80511u+7321$
c_5	$2(2u^{203}+u^{202}+\cdots-8.22687\times10^{10}u+4.61846\times10^{9})$
c_6	$2(2u^{203}-7u^{202}+\cdots+4u+11)$
c_7	$2(2u^{203}+5u^{202}+\cdots+2459520u+382966)$
c_9, c_{12}	$u^{203}-8u^{202}+\cdots-1110488u+1091189$
c_{10}	$u^{203}-4u^{201}+\cdots-1855u+158$
c_{11}	$u^{203}+3u^{202}+\cdots+6685893u+3717382$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{203} + 42y^{202} + \cdots + 1989941534611y - 23222761$
c_2	$y^{203} + 25y^{202} + \cdots + 194y - 1$
c_3	$y^{203} + 9y^{202} + \cdots + 36740y - 256$
c_4, c_8	$y^{203} - 110y^{202} + \cdots + 5254435841y - 53597041$
c_5	$4(4y^{203} - 225y^{202} + \cdots - 1.19976 \times 10^{21}y - 2.13302 \times 10^{19})$
c_6	$4(4y^{203} - 89y^{202} + \cdots + 3822y - 121)$
c_7	$4(4y^{203} - 49y^{202} + \cdots + 2.41353 \times 10^{12}y - 1.46663 \times 10^{11})$
c_9, c_{12}	$y^{203} + 142y^{202} + \cdots - 192816319316354y - 1190693433721$
c_{10}	$y^{203} - 8y^{202} + \cdots + 2071797y - 24964$
c_{11}	$y^{203} - 19y^{202} + \cdots + 1958373122289601y - 13818928933924$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.415362+0.899292I$ $a=-0.207812+0.662700I$ $b=-1.01362-1.05022I$	$-3.87742+6.13429I$	0
$u=-0.415362-0.899292I$ $a=-0.207812-0.662700I$ $b=-1.01362+1.05022I$	$-3.87742-6.13429I$	0
$u=-0.894875+0.420192I$ $a=\ \ 2.31810-0.46068I$ $b=-0.275272+0.760522I$	$-2.96780-12.19750I$	0
$u=-0.894875-0.420192I$ $a=\ \ 2.31810+0.46068I$ $b=-0.275272-0.760522I$	$-2.96780+12.19750I$	0
$u=\ \ 0.957452+0.245768I$ $a=-1.97389-1.04777I$ $b=\ \ 0.436871+0.247251I$	$0.07450+5.23115I$	0
$u=\ \ 0.957452-0.245768I$ $a=-1.97389+1.04777I$ $b=\ \ 0.436871-0.247251I$	$0.07450-5.23115I$	0
$u=-0.942656+0.291960I$ $a=\ \ 1.36836+1.40017I$ $b=-1.75070-1.53821I$	$-1.18988-1.42649I$	0
$u=-0.942656-0.291960I$ $a=\ \ 1.36836-1.40017I$ $b=-1.75070+1.53821I$	$-1.18988+1.42649I$	0
$u=-0.944282+0.280052I$ $a=-2.40162+0.54478I$ $b=\ \ 1.128980-0.281371I$	$-1.69095-4.88437I$	0
$u=-0.944282-0.280052I$ $a=-2.40162-0.54478I$ $b=\ \ 1.128980+0.281371I$	$-1.69095+4.88437I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.955121+0.229896I$ $a=-0.69761+1.69525I$ $b=\ \ 0.077342+0.607569I$	$-2.40362-6.14299I$	0
$u=-0.955121-0.229896I$ $a=-0.69761-1.69525I$ $b=\ \ 0.077342-0.607569I$	$-2.40362+6.14299I$	0
$u=\ \ 0.873412+0.437921I$ $a=-2.21088+0.44149I$ $b=\ \ 1.58276+0.07708I$	$-4.33235+7.06722I$	0
$u=\ \ 0.873412-0.437921I$ $a=-2.21088-0.44149I$ $b=\ \ 1.58276-0.07708I$	$-4.33235-7.06722I$	0
$u=-0.922495+0.317669I$ $a=\ \ 2.32477-0.59364I$ $b=-1.55662+0.79349I$	$-0.711081+0.821444I$	0
$u=-0.922495-0.317669I$ $a=\ \ 2.32477+0.59364I$ $b=-1.55662-0.79349I$	$-0.711081-0.821444I$	0
$u=-1.02967$ $a=-2.73050$ $b=\ \ 2.07191$	3.17175	0
$u=\ \ 0.908540+0.485793I$ $a=\ \ 1.91311+0.40720I$ $b=-0.183286-0.925721I$	$-4.45106+3.58775I$	0
$u=\ \ 0.908540-0.485793I$ $a=\ \ 1.91311-0.40720I$ $b=-0.183286+0.925721I$	$-4.45106-3.58775I$	0
$u=\ \ 0.002924+0.969557I$ $a=\ \ 0.215865-0.353356I$ $b=-0.755237-0.103120I$	$1.197420+0.343471I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.002924 - 0.969557I$ $a = 0.215865 + 0.353356I$ $b = -0.755237 + 0.103120I$	$1.197420 - 0.343471I$	0
$u = 0.962951 + 0.368378I$ $a = 0.369831 - 0.789035I$ $b = -0.152701 - 0.978174I$	$-1.62798 + 3.27127I$	0
$u = 0.962951 - 0.368378I$ $a = 0.369831 + 0.789035I$ $b = -0.152701 + 0.978174I$	$-1.62798 - 3.27127I$	0
$u = -0.969947 + 0.369188I$ $a = 1.049870 + 0.082946I$ $b = -0.996577 + 0.501260I$	$1.88034 - 0.84617I$	0
$u = -0.969947 - 0.369188I$ $a = 1.049870 - 0.082946I$ $b = -0.996577 - 0.501260I$	$1.88034 + 0.84617I$	0
$u = 0.925121 + 0.470981I$ $a = -1.39409 - 0.32714I$ $b = 0.314429 - 0.093935I$	$-4.24178 + 5.99564I$	0
$u = 0.925121 - 0.470981I$ $a = -1.39409 + 0.32714I$ $b = 0.314429 + 0.093935I$	$-4.24178 - 5.99564I$	0
$u = -0.110478 + 0.947327I$ $a = -0.132327 - 0.741192I$ $b = -0.332324 + 0.434466I$	$-2.14005 - 2.25458I$	0
$u = -0.110478 - 0.947327I$ $a = -0.132327 + 0.741192I$ $b = -0.332324 - 0.434466I$	$-2.14005 + 2.25458I$	0
$u = 0.954179 + 0.433018I$ $a = 2.31534 + 0.68001I$ $b = -1.02239 - 1.44882I$	$-3.96433 + 2.21418I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.954179 - 0.433018I$ $a = 2.31534 - 0.68001I$ $b = -1.02239 + 1.44882I$	$-3.96433 - 2.21418I$	0
$u = -0.884096 + 0.332899I$ $a = -2.27083 + 1.15862I$ $b = 0.348050 - 1.059630I$	$-3.37792 - 2.31299I$	0
$u = -0.884096 - 0.332899I$ $a = -2.27083 - 1.15862I$ $b = 0.348050 + 1.059630I$	$-3.37792 + 2.31299I$	0
$u = 0.429512 + 0.967202I$ $a = 0.371661 + 0.539858I$ $b = 0.647467 - 0.921815I$	$-3.67535 - 0.55845I$	0
$u = 0.429512 - 0.967202I$ $a = 0.371661 - 0.539858I$ $b = 0.647467 + 0.921815I$	$-3.67535 + 0.55845I$	0
$u = 0.891779 + 0.268410I$ $a = 0.53167 - 1.78020I$ $b = -1.02805 + 2.30859I$	$-2.10369 + 11.24030I$	0
$u = 0.891779 - 0.268410I$ $a = 0.53167 + 1.78020I$ $b = -1.02805 - 2.30859I$	$-2.10369 - 11.24030I$	0
$u = -0.260923 + 1.047260I$ $a = 0.410929 + 0.209505I$ $b = 0.537624 - 0.746484I$	$-1.07835 - 6.96206I$	0
$u = -0.260923 - 1.047260I$ $a = 0.410929 - 0.209505I$ $b = 0.537624 + 0.746484I$	$-1.07835 + 6.96206I$	0
$u = -0.901398 + 0.148091I$ $a = -4.45131 + 0.77868I$ $b = 3.21285 - 0.84558I$	$-1.91204 - 0.43767I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.901398-0.148091I$ $a=-4.45131-0.77868I$ $b=3.21285+0.84558I$	$-1.91204+0.43767I$	0
$u=1.024860+0.385707I$ $a=0.886805-0.318550I$ $b=-0.402786-0.843476I$	$-0.80214+3.54108I$	0
$u=1.024860-0.385707I$ $a=0.886805+0.318550I$ $b=-0.402786+0.843476I$	$-0.80214-3.54108I$	0
$u=-0.364898+0.817401I$ $a=-0.190010-0.027234I$ $b=-0.873020-0.277556I$	$0.65598+1.89187I$	0
$u=-0.364898-0.817401I$ $a=-0.190010+0.027234I$ $b=-0.873020+0.277556I$	$0.65598-1.89187I$	0
$u=0.766108+0.454282I$ $a=1.93240+0.48297I$ $b=-0.426037-0.609026I$	$-3.21700-1.11661I$	0
$u=0.766108-0.454282I$ $a=1.93240-0.48297I$ $b=-0.426037+0.609026I$	$-3.21700+1.11661I$	0
$u=0.877362+0.121716I$ $a=0.475549+0.912419I$ $b=-0.335112+1.041390I$	$-0.55840-3.52404I$	0
$u=0.877362-0.121716I$ $a=0.475549-0.912419I$ $b=-0.335112-1.041390I$	$-0.55840+3.52404I$	0
$u=1.094060+0.220920I$ $a=-0.341521+1.071550I$ $b=0.618269-0.016875I$	$1.26413-3.68221I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.094060 - 0.220920I$ $a = -0.341521 - 1.071550I$ $b = 0.618269 + 0.016875I$	$1.26413 + 3.68221I$	0
$u = 0.800482 + 0.361672I$ $a = -0.039714 + 0.229737I$ $b = 0.09793 - 1.43360I$	$-3.18474 + 4.65311I$	0
$u = 0.800482 - 0.361672I$ $a = -0.039714 - 0.229737I$ $b = 0.09793 + 1.43360I$	$-3.18474 - 4.65311I$	0
$u = 1.075270 + 0.330353I$ $a = -1.40397 + 0.83922I$ $b = 0.804313 + 0.822245I$	$4.06060 + 2.22713I$	0
$u = 1.075270 - 0.330353I$ $a = -1.40397 - 0.83922I$ $b = 0.804313 - 0.822245I$	$4.06060 - 2.22713I$	0
$u = 0.042996 + 0.873531I$ $a = -0.071817 + 0.645604I$ $b = 0.944670 + 0.424541I$	$0.18540 + 10.12770I$	0
$u = 0.042996 - 0.873531I$ $a = -0.071817 - 0.645604I$ $b = 0.944670 - 0.424541I$	$0.18540 - 10.12770I$	0
$u = -0.832254 + 0.246913I$ $a = -0.678227 + 0.454447I$ $b = -0.04173 - 1.90311I$	$-3.69799 - 0.33400I$	0
$u = -0.832254 - 0.246913I$ $a = -0.678227 - 0.454447I$ $b = -0.04173 + 1.90311I$	$-3.69799 + 0.33400I$	0
$u = 0.816391 + 0.287618I$ $a = -3.04409 - 0.84894I$ $b = 1.54769 + 0.98598I$	$-2.30645 - 8.68082I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.816391 - 0.287618I$ $a = -3.04409 + 0.84894I$ $b = 1.54769 - 0.98598I$	$-2.30645 + 8.68082I$	0
$u = -0.857881 + 0.074344I$ $a = -1.04252 - 3.43027I$ $b = 0.99926 + 3.69436I$	$-1.80683 - 2.95019I$	0
$u = -0.857881 - 0.074344I$ $a = -1.04252 + 3.43027I$ $b = 0.99926 - 3.69436I$	$-1.80683 + 2.95019I$	0
$u = -1.139700 + 0.067593I$ $a = -0.520122 - 1.027930I$ $b = 0.39701 + 1.50364I$	$2.89468 - 0.55993I$	0
$u = -1.139700 - 0.067593I$ $a = -0.520122 + 1.027930I$ $b = 0.39701 - 1.50364I$	$2.89468 + 0.55993I$	0
$u = 0.213387 + 1.122050I$ $a = -0.006654 - 0.400905I$ $b = -0.729469 + 0.863645I$	$-2.71993 - 6.98469I$	0
$u = 0.213387 - 1.122050I$ $a = -0.006654 + 0.400905I$ $b = -0.729469 - 0.863645I$	$-2.71993 + 6.98469I$	0
$u = 0.865936 + 0.759763I$ $a = -0.824712 + 1.043820I$ $b = 1.50845 + 0.02805I$	$2.60381 - 2.66941I$	0
$u = 0.865936 - 0.759763I$ $a = -0.824712 - 1.043820I$ $b = 1.50845 - 0.02805I$	$2.60381 + 2.66941I$	0
$u = -0.010172 + 0.845425I$ $a = -0.0798615 + 0.0371923I$ $b = -0.576223 + 0.925142I$	$-0.70649 - 4.59585I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.010172-0.845425I$ $a=-0.0798615-0.0371923I$ $b=-0.576223-0.925142I$	$-0.70649+4.59585I$	0
$u=\ \ 0.343191+1.103690I$ $a=-0.016323+0.159304I$ $b=\ \ 0.504999-0.890514I$	$-5.38825-3.22534I$	0
$u=\ \ 0.343191-1.103690I$ $a=-0.016323-0.159304I$ $b=\ \ 0.504999+0.890514I$	$-5.38825+3.22534I$	0
$u=-0.815581+0.185129I$ $a=\ \ 2.39613-1.59847I$ $b=-0.133508-0.163263I$	$-2.93557+4.13930I$	0
$u=-0.815581-0.185129I$ $a=\ \ 2.39613+1.59847I$ $b=-0.133508+0.163263I$	$-2.93557-4.13930I$	0
$u=\ \ 0.638771+0.534022I$ $a=\ \ 0.91341-1.16299I$ $b=-0.992251+0.995041I$	$-4.98129-3.10031I$	0
$u=\ \ 0.638771-0.534022I$ $a=\ \ 0.91341+1.16299I$ $b=-0.992251-0.995041I$	$-4.98129+3.10031I$	0
$u=-1.101910+0.395880I$ $a=\ \ 1.371280+0.233194I$ $b=-0.403056+0.715267I$	$0.80956+1.89714I$	0
$u=-1.101910-0.395880I$ $a=\ \ 1.371280-0.233194I$ $b=-0.403056-0.715267I$	$0.80956-1.89714I$	0
$u=-0.269452+0.780049I$ $a=\ \ 0.473111+0.407573I$ $b=-0.753563+0.404096I$	$1.41980-1.71904I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.269452-0.780049I$ $a=\ \ 0.473111-0.407573I$ $b=-0.753563-0.404096I$	$1.41980+1.71904I$	0
$u=-1.138150+0.299210I$ $a=\ \ 1.35093+0.62856I$ $b=-1.29931+0.77251I$	$6.23829+1.55497I$	0
$u=-1.138150-0.299210I$ $a=\ \ 1.35093-0.62856I$ $b=-1.29931-0.77251I$	$6.23829-1.55497I$	0
$u=\ \ 0.265605+1.147240I$ $a=\ \ 0.212614+0.344904I$ $b=\ \ 0.865737-0.876846I$	$-4.38293-6.78563I$	0
$u=\ \ 0.265605-1.147240I$ $a=\ \ 0.212614-0.344904I$ $b=\ \ 0.865737+0.876846I$	$-4.38293+6.78563I$	0
$u=-0.679012+0.462133I$ $a=\ \ 0.139102+0.479048I$ $b=\ \ 0.180311+1.399900I$	$-3.60861+8.48201I$	0
$u=-0.679012-0.462133I$ $a=\ \ 0.139102-0.479048I$ $b=\ \ 0.180311-1.399900I$	$-3.60861-8.48201I$	0
$u=-0.792909+0.204172I$ $a=\ \ 1.37194+0.46338I$ $b=-1.14683-1.24395I$	$-2.34259+2.56087I$	0
$u=-0.792909-0.204172I$ $a=\ \ 1.37194-0.46338I$ $b=-1.14683+1.24395I$	$-2.34259-2.56087I$	0
$u=-0.271401+1.154710I$ $a=\ \ 0.099871-0.368449I$ $b=\ \ 0.889741+0.903006I$	$-3.6186+15.5237I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.271401-1.154710I$ $a=\ \ 0.099871+0.368449I$ $b=\ \ 0.889741-0.903006I$	$-3.6186-15.5237I$	0
$u=-0.435292+1.111970I$ $a=\ \ 0.069919+0.485187I$ $b=-0.951304-0.672703I$	$-2.02991+5.84353I$	0
$u=-0.435292-1.111970I$ $a=\ \ 0.069919-0.485187I$ $b=-0.951304+0.672703I$	$-2.02991-5.84353I$	0
$u=\ \ 1.182400+0.190935I$ $a=-1.50368+0.33525I$ $b=\ \ 1.097070+0.323858I$	$5.83772+0.71294I$	0
$u=\ \ 1.182400-0.190935I$ $a=-1.50368-0.33525I$ $b=\ \ 1.097070-0.323858I$	$5.83772-0.71294I$	0
$u=-1.081480+0.537328I$ $a=-1.187790-0.745245I$ $b=\ \ 1.141800-0.682033I$	$2.84415-6.88891I$	0
$u=-1.081480-0.537328I$ $a=-1.187790+0.745245I$ $b=\ \ 1.141800+0.682033I$	$2.84415+6.88891I$	0
$u=\ \ 1.188680+0.256751I$ $a=\ \ 1.51320-0.22088I$ $b=-1.34257-0.86489I$	$6.88601+7.01460I$	0
$u=\ \ 1.188680-0.256751I$ $a=\ \ 1.51320+0.22088I$ $b=-1.34257+0.86489I$	$6.88601-7.01460I$	0
$u=-1.22377$ $a=\ \ 0.667574$ $b=-0.664785$	2.12975	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.052728+0.773471I$		
$a=$	$0.592347-0.222276I$	$1.18303-1.12212I$	0
$b=$	$0.632140+0.717279I$		
$u=$	$0.052728-0.773471I$		
$a=$	$0.592347+0.222276I$	$1.18303+1.12212I$	0
$b=$	$0.632140-0.717279I$		
$u=$	$0.556308+0.530621I$		
$a=$	$0.349625-0.423029I$	$-5.43601+0.55026I$	0
$b=$	$0.05029-1.42849I$		
$u=$	$0.556308-0.530621I$		
$a=$	$0.349625+0.423029I$	$-5.43601-0.55026I$	0
$b=$	$0.05029+1.42849I$		
$u=$	$0.065083+0.765139I$		
$a=$	$0.448016-0.636943I$	$-1.11795-3.00739I$	0
$b=$	$0.794968-0.365390I$		
$u=$	$0.065083-0.765139I$		
$a=$	$0.448016+0.636943I$	$-1.11795+3.00739I$	0
$b=$	$0.794968+0.365390I$		
$u=$	$0.534570+0.538984I$		
$a=$	$1.001020+0.057489I$	$-5.32769-1.89571I$	0
$b=$	$-0.025673+0.876688I$		
$u=$	$0.534570-0.538984I$		
$a=$	$1.001020-0.057489I$	$-5.32769+1.89571I$	0
$b=$	$-0.025673-0.876688I$		
$u=$	$1.249960+0.086661I$		
$a=$	$-0.951881+0.548912I$	$4.91107-2.60938I$	0
$b=$	$0.693915+0.234454I$		
$u=$	$1.249960-0.086661I$		
$a=$	$-0.951881-0.548912I$	$4.91107+2.60938I$	0
$b=$	$0.693915-0.234454I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.013070+0.753633I$ $a=-0.818664-0.742042I$ $b=\ \ 1.071270+0.063927I$	$1.57323-4.08247I$	0
$u=-1.013070-0.753633I$ $a=-0.818664+0.742042I$ $b=\ \ 1.071270-0.063927I$	$1.57323+4.08247I$	0
$u=\ \ 0.573407+0.450637I$ $a=\ \ 0.926937+0.857517I$ $b=\ \ 0.30459-1.77109I$	$-5.09680+1.51428I$	0
$u=\ \ 0.573407-0.450637I$ $a=\ \ 0.926937-0.857517I$ $b=\ \ 0.30459+1.77109I$	$-5.09680-1.51428I$	0
$u=-1.218510+0.433303I$ $a=\ \ 1.78226-0.25562I$ $b=-1.54961+1.20248I$	$4.89627-3.18817I$	0
$u=-1.218510-0.433303I$ $a=\ \ 1.78226+0.25562I$ $b=-1.54961-1.20248I$	$4.89627+3.18817I$	0
$u=\ \ 1.205960+0.471831I$ $a=\ \ 1.140010-0.464165I$ $b=-0.968014-0.917263I$	$2.23510+7.55638I$	0
$u=\ \ 1.205960-0.471831I$ $a=\ \ 1.140010+0.464165I$ $b=-0.968014+0.917263I$	$2.23510-7.55638I$	0
$u=\ \ 1.076910+0.731633I$ $a=\ \ 1.104930-0.772223I$ $b=-1.64432-0.24010I$	$3.35185+8.56193I$	0
$u=\ \ 1.076910-0.731633I$ $a=\ \ 1.104930+0.772223I$ $b=-1.64432+0.24010I$	$3.35185-8.56193I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.205910 + 0.499036I$ $a = 0.349419 - 0.637805I$ $b = -0.760091 - 0.280949I$	$4.44591 + 5.77896I$	0
$u = 1.205910 - 0.499036I$ $a = 0.349419 + 0.637805I$ $b = -0.760091 + 0.280949I$	$4.44591 - 5.77896I$	0
$u = -1.197130 + 0.521600I$ $a = 1.075450 + 0.236061I$ $b = -1.251450 + 0.306299I$	$2.20417 - 1.19635I$	0
$u = -1.197130 - 0.521600I$ $a = 1.075450 - 0.236061I$ $b = -1.251450 - 0.306299I$	$2.20417 + 1.19635I$	0
$u = 1.250610 + 0.403240I$ $a = -0.598433 - 0.572420I$ $b = 0.266291 + 1.274600I$	$1.74199 + 9.64376I$	0
$u = 1.250610 - 0.403240I$ $a = -0.598433 + 0.572420I$ $b = 0.266291 - 1.274600I$	$1.74199 - 9.64376I$	0
$u = 1.243750 + 0.426958I$ $a = -1.53999 - 0.22937I$ $b = 1.249270 + 0.627583I$	$2.05540 + 6.79534I$	0
$u = 1.243750 - 0.426958I$ $a = -1.53999 + 0.22937I$ $b = 1.249270 - 0.627583I$	$2.05540 - 6.79534I$	0
$u = -0.513289 + 1.211570I$ $a = -0.127132 - 0.366399I$ $b = 0.574258 + 0.642685I$	$-7.06711 - 3.23454I$	0
$u = -0.513289 - 1.211570I$ $a = -0.127132 + 0.366399I$ $b = 0.574258 - 0.642685I$	$-7.06711 + 3.23454I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.261240 + 0.393809I$ $a = -1.44998 + 0.40183I$ $b = 0.949217 + 0.670181I$	$5.82658 + 5.77973I$	0
$u = 1.261240 - 0.393809I$ $a = -1.44998 - 0.40183I$ $b = 0.949217 - 0.670181I$	$5.82658 - 5.77973I$	0
$u = -1.172960 + 0.613642I$ $a = -1.82281 - 0.14442I$ $b = 1.54599 - 1.12914I$	$-1.49415 - 11.74120I$	0
$u = -1.172960 - 0.613642I$ $a = -1.82281 + 0.14442I$ $b = 1.54599 + 1.12914I$	$-1.49415 + 11.74120I$	0
$u = 0.675643$ $a = -2.52107$ $b = -0.236846$	2.02655	0
$u = 1.238130 + 0.473771I$ $a = -1.59437 - 0.18463I$ $b = 1.08643 + 1.18390I$	$2.98501 + 9.30926I$	0
$u = 1.238130 - 0.473771I$ $a = -1.59437 + 0.18463I$ $b = 1.08643 - 1.18390I$	$2.98501 - 9.30926I$	0
$u = -1.250080 + 0.465648I$ $a = 1.31986 + 0.54475I$ $b = -0.991665 + 0.829560I$	$4.0376 - 14.8468I$	0
$u = -1.250080 - 0.465648I$ $a = 1.31986 - 0.54475I$ $b = -0.991665 - 0.829560I$	$4.0376 + 14.8468I$	0
$u = -0.054257 + 0.661613I$ $a = -0.562765 + 0.865346I$ $b = 0.290493 + 0.871582I$	$-2.07189 - 5.72387I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.054257-0.661613I$ $a=-0.562765-0.865346I$ $b=\ \ 0.290493-0.871582I$	$-2.07189+5.72387I$	0
$u=\ \ 1.179620+0.636565I$ $a=\ \ 1.393230-0.006450I$ $b=-1.22409-1.11680I$	$-1.29940+6.41396I$	0
$u=\ \ 1.179620-0.636565I$ $a=\ \ 1.393230+0.006450I$ $b=-1.22409+1.11680I$	$-1.29940-6.41396I$	0
$u=-1.274130+0.427777I$ $a=-0.390987-0.214331I$ $b=\ \ 0.223897-0.703435I$	$1.83991-2.95394I$	0
$u=-1.274130-0.427777I$ $a=-0.390987+0.214331I$ $b=\ \ 0.223897+0.703435I$	$1.83991+2.95394I$	0
$u=-0.607400+0.219072I$ $a=-2.91038-1.07849I$ $b=\ \ 1.023400+0.374254I$	$-2.50491-0.93914I$	0
$u=-0.607400-0.219072I$ $a=-2.91038+1.07849I$ $b=\ \ 1.023400-0.374254I$	$-2.50491+0.93914I$	0
$u=\ \ 1.282490+0.448602I$ $a=-1.327440+0.245431I$ $b=\ \ 1.055040+0.280830I$	$5.31228+4.65426I$	0
$u=\ \ 1.282490-0.448602I$ $a=-1.327440-0.245431I$ $b=\ \ 1.055040-0.280830I$	$5.31228-4.65426I$	0
$u=-1.281500+0.461344I$ $a=-1.164950-0.538206I$ $b=\ \ 0.874887-0.510887I$	$5.24555-5.35358I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.281500-0.461344I$ $a=-1.164950+0.538206I$ $b=\ \ 0.874887+0.510887I$	$5.24555+5.35358I$	0
$u=\ \ 1.303080+0.416173I$ $a=\ \ 1.62422+0.48159I$ $b=-1.50793-1.26810I$	$3.73766+11.68480I$	0
$u=\ \ 1.303080-0.416173I$ $a=\ \ 1.62422-0.48159I$ $b=-1.50793+1.26810I$	$3.73766-11.68480I$	0
$u=-1.304420+0.454028I$ $a=-0.141883-0.461984I$ $b=\ \ 0.318072+0.042269I$	$3.07900-0.31827I$	0
$u=-1.304420-0.454028I$ $a=-0.141883+0.461984I$ $b=\ \ 0.318072-0.042269I$	$3.07900+0.31827I$	0
$u=\ \ 1.230340+0.637651I$ $a=\ \ 1.41504-0.03909I$ $b=-0.926259-0.968381I$	$-2.54772+9.37229I$	0
$u=\ \ 1.230340-0.637651I$ $a=\ \ 1.41504+0.03909I$ $b=-0.926259+0.968381I$	$-2.54772-9.37229I$	0
$u=\ \ 1.307890+0.491037I$ $a=\ \ 0.976124-0.441253I$ $b=-1.132070+0.084049I$	$3.92694-5.04300I$	0
$u=\ \ 1.307890-0.491037I$ $a=\ \ 0.976124+0.441253I$ $b=-1.132070-0.084049I$	$3.92694+5.04300I$	0
$u=-1.223770+0.679062I$ $a=\ \ 1.347210+0.039797I$ $b=-1.051200+0.826646I$	$-4.54322-3.37296I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.223770-0.679062I$ $a=\ \ 1.347210-0.039797I$ $b=-1.051200-0.826646I$	$-4.54322+3.37296I$	0
$u=-1.406340+0.080162I$ $a=\ \ 0.594314+0.235923I$ $b=-0.839831+0.337638I$	$2.38224+2.06034I$	0
$u=-1.406340-0.080162I$ $a=\ \ 0.594314-0.235923I$ $b=-0.839831-0.337638I$	$2.38224-2.06034I$	0
$u=-1.40691+0.15993I$ $a=-0.372017-0.543088I$ $b=\ \ 0.308061-0.099331I$	$3.53879+2.13558I$	0
$u=-1.40691-0.15993I$ $a=-0.372017+0.543088I$ $b=\ \ 0.308061+0.099331I$	$3.53879-2.13558I$	0
$u=-1.24401+0.68372I$ $a=-1.48786-0.24785I$ $b=\ \ 1.39493-0.83989I$	$0.61012-12.28850I$	0
$u=-1.24401-0.68372I$ $a=-1.48786+0.24785I$ $b=\ \ 1.39493+0.83989I$	$0.61012+12.28850I$	0
$u=\ \ 1.28716+0.61038I$ $a=-1.57905-0.04886I$ $b=\ \ 1.30729+1.04740I$	$0.67097+13.08400I$	0
$u=\ \ 1.28716-0.61038I$ $a=-1.57905+0.04886I$ $b=\ \ 1.30729-1.04740I$	$0.67097-13.08400I$	0
$u=\ \ 0.513258+0.251212I$ $a=\ \ 2.83960-0.23058I$ $b=\ \ 0.073077-0.169275I$	$-2.97053-0.15806I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.513258 - 0.251212I$ $a = 2.83960 + 0.23058I$ $b = 0.073077 + 0.169275I$	$-2.97053 + 0.15806I$	0
$u = 1.28306 + 0.63744I$ $a = 1.53530 - 0.00970I$ $b = -1.36477 - 1.22866I$	$-1.14839 + 13.07000I$	0
$u = 1.28306 - 0.63744I$ $a = 1.53530 + 0.00970I$ $b = -1.36477 + 1.22866I$	$-1.14839 - 13.07000I$	0
$u = -1.40372 + 0.31591I$ $a = -0.792881 + 0.800536I$ $b = 0.577716 - 1.230100I$	$1.38175 - 1.95752I$	0
$u = -1.40372 - 0.31591I$ $a = -0.792881 - 0.800536I$ $b = 0.577716 + 1.230100I$	$1.38175 + 1.95752I$	0
$u = -1.28698 + 0.64633I$ $a = 1.58437 + 0.03359I$ $b = -1.37421 + 1.16127I$	$-0.3936 - 21.8727I$	0
$u = -1.28698 - 0.64633I$ $a = 1.58437 - 0.03359I$ $b = -1.37421 - 1.16127I$	$-0.3936 + 21.8727I$	0
$u = 0.35989 + 1.41070I$ $a = -0.007257 - 0.355529I$ $b = -0.529463 + 0.529576I$	$-6.59977 - 4.77761I$	0
$u = 0.35989 - 1.41070I$ $a = -0.007257 + 0.355529I$ $b = -0.529463 - 0.529576I$	$-6.59977 + 4.77761I$	0
$u = -1.11486 + 0.95215I$ $a = -0.668965 - 0.460897I$ $b = 1.003180 - 0.449210I$	$1.88854 - 6.49373I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.11486-0.95215I$ $a=-0.668965+0.460897I$ $b=\ \ 1.003180+0.449210I$	$1.88854+6.49373I$	0
$u=\ \ 0.303556+0.437243I$ $a=\ \ 1.19782-1.34934I$ $b=\ \ 0.167026-0.477971I$	$-2.66082+0.01005I$	0
$u=\ \ 0.303556-0.437243I$ $a=\ \ 1.19782+1.34934I$ $b=\ \ 0.167026+0.477971I$	$-2.66082-0.01005I$	0
$u=\ \ 1.33693+0.69360I$ $a=-1.179050-0.079614I$ $b=\ \ 1.07542+0.94938I$	$-3.23328+11.93110I$	0
$u=\ \ 1.33693-0.69360I$ $a=-1.179050+0.079614I$ $b=\ \ 1.07542-0.94938I$	$-3.23328-11.93110I$	0
$u=-1.39782+0.58166I$ $a=-0.903378-0.227842I$ $b=\ \ 0.782382-0.184890I$	$4.32382-4.36197I$	0
$u=-1.39782-0.58166I$ $a=-0.903378+0.227842I$ $b=\ \ 0.782382+0.184890I$	$4.32382+4.36197I$	0
$u=-1.29354+0.80196I$ $a=\ \ 0.740786+0.262010I$ $b=-1.127660+0.333991I$	$2.74824-1.18727I$	0
$u=-1.29354-0.80196I$ $a=\ \ 0.740786-0.262010I$ $b=-1.127660-0.333991I$	$2.74824+1.18727I$	0
$u=\ \ 1.52314+0.09990I$ $a=\ \ 0.472288-0.431171I$ $b=-0.627983-0.061840I$	$3.13305-10.50110I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.52314 - 0.09990I$ $a = 0.472288 + 0.431171I$ $b = -0.627983 + 0.061840I$	$3.13305 + 10.50110I$	0
$u = -0.070900 + 0.462386I$ $a = 1.66475 - 0.10332I$ $b = 0.952118 - 0.119605I$	$3.12794 - 4.43449I$	$8.44885 + 7.26104I$
$u = -0.070900 - 0.462386I$ $a = 1.66475 + 0.10332I$ $b = 0.952118 + 0.119605I$	$3.12794 + 4.43449I$	$8.44885 - 7.26104I$
$u = -1.53994 + 0.42816I$ $a = 0.020260 + 0.262022I$ $b = -0.278160 + 0.314783I$	$3.08513 + 0.35535I$	0
$u = -1.53994 - 0.42816I$ $a = 0.020260 - 0.262022I$ $b = -0.278160 - 0.314783I$	$3.08513 - 0.35535I$	0
$u = -0.103713 + 0.387544I$ $a = 1.199040 - 0.357427I$ $b = -0.117582 + 0.482643I$	$0.444059 - 1.261860I$	$4.91286 + 4.63218I$
$u = -0.103713 - 0.387544I$ $a = 1.199040 + 0.357427I$ $b = -0.117582 - 0.482643I$	$0.444059 + 1.261860I$	$4.91286 - 4.63218I$
$u = -0.07668 + 1.64017I$ $a = -0.065784 + 0.228145I$ $b = -0.152486 - 0.228209I$	$-4.67638 - 4.52811I$	0
$u = -0.07668 - 1.64017I$ $a = -0.065784 - 0.228145I$ $b = -0.152486 + 0.228209I$	$-4.67638 + 4.52811I$	0
$u = -0.110178 + 0.330566I$ $a = 1.16392 - 0.98764I$ $b = -0.109711 + 1.282780I$	$-2.39619 - 3.50536I$	$-2.32903 + 1.77977I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.110178-0.330566I$ $a=\ \ 1.16392+0.98764I$ $b=-0.109711-1.282780I$	$-2.39619+3.50536I$	$-2.32903-1.77977I$
$u=-0.229828$ $a=\ \ 1.78238$ $b=-0.776172$	1.64369	8.11750
$u=-0.129423$ $a=\ \ 5.65008$ $b=-0.896993$	1.59226	11.9420

II.

$\boldsymbol{I_2^u = \langle 1.31\times 10^{60}u^{49}+1.33\times 10^{60}u^{48}+\cdots+7.87\times 10^{58}b+6.21\times 10^{59},\ -1.48\times 10^{60}u^{49}-1.56\times 10^{60}u^{48}+\cdots+7.87\times 10^{58}a-7.13\times 10^{59},\ u^{50}+u^{49}+\cdots-u+1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 18.7634u^{49} + 19.8851u^{48} + \cdots - 48.5576u + 9.06249 \\ -16.6950u^{49} - 16.8858u^{48} + \cdots + 41.3570u - 7.89452 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 17.6370u^{49} + 18.2744u^{48} + \cdots - 47.4202u + 9.99346 \\ -15.5686u^{49} - 15.2750u^{48} + \cdots + 40.2196u - 8.82549 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 21.0483u^{49} - 10.5923u^{48} + \cdots - 127.437u + 67.3379 \\ -12.4036u^{49} + 10.1549u^{48} + \cdots + 73.6768u - 43.7186 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -60.9798u^{49} - 45.6514u^{48} + \cdots + 182.212u - 46.5606 \\ 39.1711u^{49} + 33.8004u^{48} + \cdots - 95.6716u + 16.8798 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 24.9094u^{49} + 23.6681u^{48} + \cdots - 72.2730u + 18.0788 \\ -19.9736u^{49} - 19.6660u^{48} + \cdots + 49.8661u - 10.2575 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 22.7887u^{49} + 14.0600u^{48} + \cdots - 58.8778u + 17.1876 \\ -4.76674u^{49} - 11.2406u^{48} + \cdots - 1.30878u + 9.26784 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -41.0336u^{49} - 47.5575u^{48} + \cdots + 99.1207u - 20.2116 \\ 39.3074u^{49} + 44.7248u^{48} + \cdots - 77.7751u + 14.1418 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -49.3553u^{49} - 5.70787u^{48} + \cdots + 169.775u - 83.7004 \\ 21.4885u^{49} - 4.89438u^{48} + \cdots - 64.3359u + 39.9719 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 300.545u^{49} + 408.122u^{48} + \cdots - 390.330u - 108.565$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{50} - 15u^{49} + \cdots - 5u + 1$
c_2	$u^{50} + 2u^{49} + \cdots + 8u + 1$
c_3	$u^{50} + 2u^{49} + \cdots + 152u + 9$
c_4	$u^{50} - u^{49} + \cdots + u + 1$
c_5	$u^{50} + 3u^{49} + \cdots + 62u + 3$
c_6	$u^{50} + 4u^{49} + \cdots - 7u + 1$
c_7	$u^{50} + 5u^{49} + \cdots - 79u + 21$
c_8	$u^{50} + u^{49} + \cdots - u + 1$
c_9	$u^{50} + 9u^{49} + \cdots + 14u + 1$
c_{10}	$u^{50} + 2u^{49} + \cdots + 2u + 1$
c_{11}	$u^{50} + u^{49} + \cdots - 385u + 73$
c_{12}	$u^{50} - 9u^{49} + \cdots - 14u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{50} + 13y^{49} + \cdots + 59y + 1$
c_2	$y^{50} + 28y^{49} + \cdots + 4y + 1$
c_3	$y^{50} + 18y^{49} + \cdots + 2726y + 81$
c_4, c_8	$y^{50} - 23y^{49} + \cdots - 11y + 1$
c_5	$y^{50} - 9y^{49} + \cdots - 856y + 9$
c_6	$y^{50} - 8y^{49} + \cdots - 25y + 1$
c_7	$y^{50} + 11y^{49} + \cdots + 731y + 441$
c_9, c_{12}	$y^{50} + 49y^{49} + \cdots - 36y + 1$
c_{10}	$y^{50} + 14y^{49} + \cdots - 42y^2 + 1$
c_{11}	$y^{50} + 11y^{49} + \cdots - 116105y + 5329$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.979533+0.244417I$ $a=-1.15576+1.36277I$ $b=\ \ 0.334192+0.357473I$	$-2.08791-6.16379I$	$14.4561+12.0834I$
$u=-0.979533-0.244417I$ $a=-1.15576-1.36277I$ $b=\ \ 0.334192-0.357473I$	$-2.08791+6.16379I$	$14.4561-12.0834I$
$u=-0.930274+0.414483I$ $a=-2.16981+0.73984I$ $b=\ \ 0.444472-1.213660I$	$-3.44482-3.43958I$	$4.00000+8.45629I$
$u=-0.930274-0.414483I$ $a=-2.16981-0.73984I$ $b=\ \ 0.444472+1.213660I$	$-3.44482+3.43958I$	$4.00000-8.45629I$
$u=-0.891005+0.552623I$ $a=\ \ 0.749148+1.174700I$ $b=-1.169030+0.055784I$	$3.82773+2.65583I$	0
$u=-0.891005-0.552623I$ $a=\ \ 0.749148-1.174700I$ $b=-1.169030-0.055784I$	$3.82773-2.65583I$	0
$u=-0.320844+1.014670I$ $a=-0.121594+0.517807I$ $b=-0.865007-0.883880I$	$-3.18409+5.82509I$	0
$u=-0.320844-1.014670I$ $a=-0.121594-0.517807I$ $b=-0.865007+0.883880I$	$-3.18409-5.82509I$	0
$u=\ \ 0.863144+0.135298I$ $a=\ \ 4.24251-0.08863I$ $b=-2.99886+0.05850I$	$-1.99227+0.40754I$	$-17.2715+30.5408I$
$u=\ \ 0.863144-0.135298I$ $a=\ \ 4.24251+0.08863I$ $b=-2.99886-0.05850I$	$-1.99227-0.40754I$	$-17.2715-30.5408I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.852285+0.145871I$ $a=\ \ 2.15634-1.55914I$ $b=-0.513968-0.363710I$	$-2.77353+4.38322I$	$7.7174-15.4863I$
$u=-0.852285-0.145871I$ $a=\ \ 2.15634+1.55914I$ $b=-0.513968+0.363710I$	$-2.77353-4.38322I$	$7.7174+15.4863I$
$u=\ \ 0.835751+0.075628I$ $a=-0.87541+3.17909I$ $b=\ \ 0.80591-3.40883I$	$-1.82901+2.93990I$	$-102.7223+67.6745I$
$u=\ \ 0.835751-0.075628I$ $a=-0.87541-3.17909I$ $b=\ \ 0.80591+3.40883I$	$-1.82901-2.93990I$	$-102.7223-67.6745I$
$u=\ \ 1.124130+0.330433I$ $a=\ \ 0.541999+0.475533I$ $b=-0.477600-0.868843I$	$2.46153+0.79337I$	0
$u=\ \ 1.124130-0.330433I$ $a=\ \ 0.541999-0.475533I$ $b=-0.477600+0.868843I$	$2.46153-0.79337I$	0
$u=-0.042798+0.813062I$ $a=\ \ 0.157036-0.397943I$ $b=-0.779129-0.258410I$	$0.98115+1.10321I$	$5.69144-3.12152I$
$u=-0.042798-0.813062I$ $a=\ \ 0.157036+0.397943I$ $b=-0.779129+0.258410I$	$0.98115-1.10321I$	$5.69144+3.12152I$
$u=\ \ 0.762951+0.261217I$ $a=-0.728367-1.006170I$ $b=-0.071789-0.862288I$	$-1.09268+4.57589I$	$2.69298-8.67577I$
$u=\ \ 0.762951-0.261217I$ $a=-0.728367+1.006170I$ $b=-0.071789+0.862288I$	$-1.09268-4.57589I$	$2.69298+8.67577I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.110440+0.507988I$ $a=-0.978996-0.550252I$ $b=\ \ 1.252380-0.583962I$	$4.81206-7.13900I$	0
$u=-1.110440-0.507988I$ $a=-0.978996+0.550252I$ $b=\ \ 1.252380+0.583962I$	$4.81206+7.13900I$	0
$u=\ \ 0.072325+1.238530I$ $a=\ \ 0.051342+0.553946I$ $b=\ \ 0.224356-0.387627I$	$-6.39220+3.89351I$	0
$u=\ \ 0.072325-1.238530I$ $a=\ \ 0.051342-0.553946I$ $b=\ \ 0.224356+0.387627I$	$-6.39220-3.89351I$	0
$u=-0.651822+0.334525I$ $a=-1.300010-0.041308I$ $b=\ \ 0.09557-1.74427I$	$-4.39851+0.01341I$	$-3.15892-0.50193I$
$u=-0.651822-0.334525I$ $a=-1.300010+0.041308I$ $b=\ \ 0.09557+1.74427I$	$-4.39851-0.01341I$	$-3.15892+0.50193I$
$u=-0.661288+0.091994I$ $a=\ \ 2.55973+1.41302I$ $b=-0.88278-1.50493I$	$-2.44047-10.11450I$	$3.00451+7.11704I$
$u=-0.661288-0.091994I$ $a=\ \ 2.55973-1.41302I$ $b=-0.88278+1.50493I$	$-2.44047+10.11450I$	$3.00451-7.11704I$
$u=-1.281190+0.457487I$ $a=-1.303890-0.405846I$ $b=\ \ 0.903764-0.558190I$	$4.84403-5.90050I$	0
$u=-1.281190-0.457487I$ $a=-1.303890+0.405846I$ $b=\ \ 0.903764+0.558190I$	$4.84403+5.90050I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.024720 + 0.931142I$ $a = 0.700225 - 0.603200I$ $b = -1.105090 - 0.377866I$	$1.61624 + 6.51721I$	0
$u = 1.024720 - 0.931142I$ $a = 0.700225 + 0.603200I$ $b = -1.105090 + 0.377866I$	$1.61624 - 6.51721I$	0
$u = -1.243890 + 0.638367I$ $a = -1.57324 - 0.09706I$ $b = 1.40678 - 1.01888I$	$-0.30705 - 11.83690I$	0
$u = -1.243890 - 0.638367I$ $a = -1.57324 + 0.09706I$ $b = 1.40678 + 1.01888I$	$-0.30705 + 11.83690I$	0
$u = -1.352630 + 0.353921I$ $a = 0.960018 - 0.721319I$ $b = -0.494262 + 1.233310I$	$1.25896 - 10.95850I$	0
$u = -1.352630 - 0.353921I$ $a = 0.960018 + 0.721319I$ $b = -0.494262 - 1.233310I$	$1.25896 + 10.95850I$	0
$u = 0.568599 + 0.176853I$ $a = 3.13400 - 0.06086I$ $b = -0.700753 - 0.130350I$	$-2.37685 - 0.16806I$	$5.77176 - 3.53520I$
$u = 0.568599 - 0.176853I$ $a = 3.13400 + 0.06086I$ $b = -0.700753 + 0.130350I$	$-2.37685 + 0.16806I$	$5.77176 + 3.53520I$
$u = 1.46036 + 0.11890I$ $a = -0.312873 + 0.275406I$ $b = 0.408066 + 0.300516I$	$2.83601 - 1.40399I$	0
$u = 1.46036 - 0.11890I$ $a = -0.312873 - 0.275406I$ $b = 0.408066 - 0.300516I$	$2.83601 + 1.40399I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.38021 + 0.52670I$ $a = -0.982369 + 0.183391I$ $b = 0.782722 + 0.194544I$	$4.26216 + 4.21941I$	0
$u = 1.38021 - 0.52670I$ $a = -0.982369 - 0.183391I$ $b = 0.782722 - 0.194544I$	$4.26216 - 4.21941I$	0
$u = 0.164530 + 0.475429I$ $a = 1.48315 - 0.25949I$ $b = 0.11170 - 1.44128I$	$-4.67411 + 0.67670I$	$-2.68411 - 0.53298I$
$u = 0.164530 - 0.475429I$ $a = 1.48315 + 0.25949I$ $b = 0.11170 + 1.44128I$	$-4.67411 - 0.67670I$	$-2.68411 + 0.53298I$
$u = 1.40783 + 0.68571I$ $a = -0.771817 + 0.032734I$ $b = 1.060630 + 0.542293I$	$3.05472 + 0.93938I$	0
$u = 1.40783 - 0.68571I$ $a = -0.771817 - 0.032734I$ $b = 1.060630 - 0.542293I$	$3.05472 - 0.93938I$	0
$u = 0.169150 + 0.355045I$ $a = 1.01935 - 2.23933I$ $b = -0.478660 + 0.941272I$	$-3.05580 - 3.13859I$	$0.71817 + 6.65696I$
$u = 0.169150 - 0.355045I$ $a = 1.01935 + 2.23933I$ $b = -0.478660 - 0.941272I$	$-3.05580 + 3.13859I$	$0.71817 - 6.65696I$
$u = -0.01570 + 1.64014I$ $a = 0.019301 - 0.191847I$ $b = 0.206382 + 0.313760I$	$-4.70972 + 4.72747I$	0
$u = -0.01570 - 1.64014I$ $a = 0.019301 + 0.191847I$ $b = 0.206382 - 0.313760I$	$-4.70972 - 4.72747I$	0

III. $I_3^u = \langle 2b-3,\ 2a+5,\ u-1 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -2.5 \\ 1.5 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1.5 \\ 0.5 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -2.25 \\ 1.75 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -2.75 \\ 2.25 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1.5 \\ 0.5 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.5 \\ -0.5 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 4 \\ -4 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 26.0625$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_8, c_9, c_{12}	$y-1$
c_3	y
c_5, c_7	$4(4y-9)$
c_6	$4(4y-1)$
c_{10}, c_{11}	$y-4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.00000$ $a = -2.50000$ $b = \quad 1.50000$	3.28987	26.0630

IV. $I_4^u = \langle b,\ a+1,\ u-1 \rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_9	$u+1$
c_2, c_6, c_8 c_{10}, c_{11}, c_{12}	$u-1$
c_3, c_5, c_7	u

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_6, c_8, c_9 c_{10}, c_{11}, c_{12}	$y-1$
c_3, c_5, c_7	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.00000$		
$a = -1.00000$	3.28987	12.0000
$b = \quad 0$		

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u+1)^2)(u^{50}-15u^{49}+\cdots-5u+1)$ $\cdot(u^{203}+10u^{202}+\cdots-1413591u+4819)$
c_2	$((u-1)^2)(u^{50}+2u^{49}+\cdots+8u+1)(u^{203}+3u^{202}+\cdots+62u+1)$
c_3	$u^2(u^{50}+2u^{49}+\cdots+152u+9)(u^{203}+u^{202}+\cdots-274u+16)$
c_4	$((u+1)^2)(u^{50}-u^{49}+\cdots+u+1)(u^{203}-2u^{202}+\cdots-80511u+7321)$
c_5	$4(u)(2u-3)(u^{50}+3u^{49}+\cdots+62u+3)$ $\cdot(2u^{203}+u^{202}+\cdots-82268703170u+4618463170)$
c_6	$4(u-1)(2u+1)(u^{50}+4u^{49}+\cdots-7u+1)(2u^{203}-7u^{202}+\cdots+4u+11)$
c_7	$4(u)(2u-3)(u^{50}+5u^{49}+\cdots-79u+21)$ $\cdot(2u^{203}+5u^{202}+\cdots+2459520u+382966)$
c_8	$((u-1)^2)(u^{50}+u^{49}+\cdots-u+1)(u^{203}-2u^{202}+\cdots-80511u+7321)$
c_9	$((u+1)^2)(u^{50}+9u^{49}+\cdots+14u+1)$ $\cdot(u^{203}-8u^{202}+\cdots-1110488u+1091189)$
c_{10}	$(u-1)(u+2)(u^{50}+2u^{49}+\cdots+2u+1)$ $\cdot(u^{203}-4u^{201}+\cdots-1855u+158)$
c_{11}	$(u-1)(u+2)(u^{50}+u^{49}+\cdots-385u+73)$ $\cdot(u^{203}+3u^{202}+\cdots+6685893u+3717382)$
c_{12}	$((u-1)^2)(u^{50}-9u^{49}+\cdots-14u+1)$ $\cdot(u^{203}-8u^{202}+\cdots-1110488u+1091189)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^2)(y^{50}+13y^{49}+\cdots+59y+1)$ $\cdot(y^{203}+42y^{202}+\cdots+1989941534611y-23222761)$
c_2	$((y-1)^2)(y^{50}+28y^{49}+\cdots+4y+1)(y^{203}+25y^{202}+\cdots+194y-1)$
c_3	$y^2(y^{50}+18y^{49}+\cdots+2726y+81)(y^{203}+9y^{202}+\cdots+36740y-256)$
c_4, c_8	$((y-1)^2)(y^{50}-23y^{49}+\cdots-11y+1)$ $\cdot(y^{203}-110y^{202}+\cdots+5254435841y-53597041)$
c_5	$16(y)(4y-9)(y^{50}-9y^{49}+\cdots-856y+9)$ $\cdot(4y^{203}-225y^{202}+\cdots-1.20\times10^{21}y-2.13\times10^{19})$
c_6	$16(y-1)(4y-1)(y^{50}-8y^{49}+\cdots-25y+1)$ $\cdot(4y^{203}-89y^{202}+\cdots+3822y-121)$
c_7	$16(y)(4y-9)(y^{50}+11y^{49}+\cdots+731y+441)$ $\cdot(4y^{203}-49y^{202}+\cdots+2413527165508y-146662957156)$
c_9, c_{12}	$((y-1)^2)(y^{50}+49y^{49}+\cdots-36y+1)$ $\cdot(y^{203}+142y^{202}+\cdots-192816319316354y-1190693433721)$
c_{10}	$(y-4)(y-1)(y^{50}+14y^{49}+\cdots-42y^2+1)$ $\cdot(y^{203}-8y^{202}+\cdots+2071797y-24964)$
c_{11}	$(y-4)(y-1)(y^{50}+11y^{49}+\cdots-116105y+5329)$ $\cdot(y^{203}-19y^{202}+\cdots+1958373122289601y-13818928933924)$