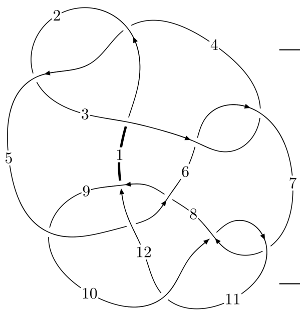
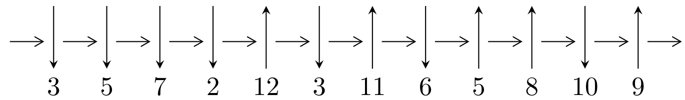
$12n_{0122}$ ($K12n_{0122}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -5.51787 \times 10^{81} u^{67} + 2.11041 \times 10^{82} u^{66} + \cdots + 3.86959 \times 10^{83} b + 2.32790 \times 10^{83},$$
$$2.89477 \times 10^{83} u^{67} - 1.45377 \times 10^{84} u^{66} + \cdots + 3.86959 \times 10^{83} a + 1.55319 \times 10^{85},\ u^{68} - 5u^{67} + \cdots + 61u +$$
$$I_2^u = \langle b,\ -u^8 + 2u^7 - 3u^6 + 2u^5 - 3u^4 + 2u^3 - 2u^2 + a - 1,\ u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1 \rangle$$
$$I_3^u = \langle -120a^2u - 76a^2 - 865au + 691b - 663a + 177u + 43,\ a^3 - a^2u + 7a^2 - 4au - 3a - 5u - 12,$$
$$u^2 + u + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 83 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. $\boldsymbol{I_1^u = \langle -5.52 \times 10^{81} u^{67} + 2.11 \times 10^{82} u^{66} + \cdots + 3.87 \times 10^{83} b + 2.33 \times 10^{83},\ 2.89 \times 10^{83} u^{67} - 1.45 \times 10^{84} u^{66} + \cdots + 3.87 \times 10^{83} a + 1.55 \times 10^{85},\ u^{68} - 5u^{67} + \cdots + 61u + 1 \rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.748081u^{67} + 3.75690u^{66} + \cdots + 210.979u - 40.1384 \\ 0.0142596u^{67} - 0.0545384u^{66} + \cdots - 3.15431u - 0.601589 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.341935u^{67} + 1.84496u^{66} + \cdots + 122.527u - 21.0582 \\ -0.0113435u^{67} + 0.205218u^{66} + \cdots + 3.86731u - 0.239724 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.338281u^{67} + 1.62581u^{66} + \cdots + 112.042u - 21.2277 \\ 0.0236591u^{67} - 0.0564694u^{66} + \cdots + 3.36495u - 0.255517 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.330587u^{67} + 1.67938u^{66} + \cdots + 116.221u - 23.6818 \\ 0.0236591u^{67} - 0.0564694u^{66} + \cdots + 3.36495u - 0.255517 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.0416035u^{67} - 0.370846u^{66} + \cdots - 11.8634u + 0.807059 \\ 0.0469200u^{67} - 0.282851u^{66} + \cdots - 0.607431u + 0.0154252 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.762341u^{67} + 3.81144u^{66} + \cdots + 214.133u - 39.5368 \\ 0.0142596u^{67} - 0.0545384u^{66} + \cdots - 3.15431u - 0.601589 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.105467u^{67} - 0.401649u^{66} + \cdots - 40.5394u + 7.48605 \\ -0.151780u^{67} + 0.736790u^{66} + \cdots + 7.94430u + 0.222620 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.145860u^{67} + 0.285659u^{66} + \cdots + 33.4674u - 8.97504$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{68} + 72u^{67} + \cdots - 116u + 1$
c_2, c_4	$u^{68} - 12u^{67} + \cdots + 4u - 1$
c_3, c_6	$u^{68} + 3u^{67} + \cdots + 2048u + 512$
c_5	$u^{68} + 4u^{67} + \cdots + 20u^2 - 1$
c_7, c_{10}	$u^{68} + 5u^{67} + \cdots - 61u + 1$
c_8	$u^{68} - 8u^{67} + \cdots - 679u + 1423$
c_9	$u^{68} - 4u^{67} + \cdots - 1569175u - 179693$
c_{11}	$u^{68} + 33u^{67} + \cdots - 4365u + 1$
c_{12}	$u^{68} + 6u^{67} + \cdots - 992u + 64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{68} - 140y^{67} + \cdots + 13088y + 1$
c_2, c_4	$y^{68} - 72y^{67} + \cdots + 116y + 1$
c_3, c_6	$y^{68} - 51y^{67} + \cdots - 1048576y + 262144$
c_5	$y^{68} - 16y^{67} + \cdots - 40y + 1$
c_7, c_{10}	$y^{68} + 33y^{67} + \cdots - 4365y + 1$
c_8	$y^{68} - 68y^{67} + \cdots + 88237y + 2024929$
c_9	$y^{68} - 20y^{67} + \cdots - 70781434415y + 32289574249$
c_{11}	$y^{68} + 9y^{67} + \cdots - 19115909y + 1$
c_{12}	$y^{68} + 30y^{67} + \cdots - 332800y + 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.424757 + 0.915138I$ $a = -1.40780 + 0.30590I$ $b = -0.22825 + 1.49715I$	$2.67134 + 4.86258I$	$-14.4423 - 3.8383I$
$u = 0.424757 - 0.915138I$ $a = -1.40780 - 0.30590I$ $b = -0.22825 - 1.49715I$	$2.67134 - 4.86258I$	$-14.4423 + 3.8383I$
$u = -0.485295 + 0.862009I$ $a = -6.44205 + 2.64222I$ $b = -0.604973 + 0.042933I$	$-1.10951 - 2.08005I$	$43.7323 + 52.4587I$
$u = -0.485295 - 0.862009I$ $a = -6.44205 - 2.64222I$ $b = -0.604973 - 0.042933I$	$-1.10951 + 2.08005I$	$43.7323 - 52.4587I$
$u = 0.731003 + 0.711801I$ $a = 0.461608 + 0.068557I$ $b = -0.061104 - 0.642060I$	$3.23957 - 1.57241I$	$8.29788 + 4.00370I$
$u = 0.731003 - 0.711801I$ $a = 0.461608 - 0.068557I$ $b = -0.061104 + 0.642060I$	$3.23957 + 1.57241I$	$8.29788 - 4.00370I$
$u = -0.532729 + 0.793838I$ $a = -4.58885 - 1.30458I$ $b = -0.430627 + 0.271631I$	$-1.11507 - 2.15821I$	$-17.5757 + 1.3433I$
$u = -0.532729 - 0.793838I$ $a = -4.58885 + 1.30458I$ $b = -0.430627 - 0.271631I$	$-1.11507 + 2.15821I$	$-17.5757 - 1.3433I$
$u = 0.005378 + 0.951686I$ $a = 0.387546 - 0.444818I$ $b = -0.238112 - 0.586278I$	$-1.99133 - 1.66625I$	$-3.10323 + 3.30828I$
$u = 0.005378 - 0.951686I$ $a = 0.387546 + 0.444818I$ $b = -0.238112 + 0.586278I$	$-1.99133 + 1.66625I$	$-3.10323 - 3.30828I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.408970+0.857975I$ $a=-0.45960-1.92882I$ $b=-0.637620+0.101517I$	$-1.07758-1.62874I$	$1.55460+6.14952I$
$u=-0.408970-0.857975I$ $a=-0.45960+1.92882I$ $b=-0.637620-0.101517I$	$-1.07758+1.62874I$	$1.55460-6.14952I$
$u=-0.766786+0.740371I$ $a=0.651267-0.131314I$ $b=0.615638+0.219403I$	$1.02080-2.73193I$	0
$u=-0.766786-0.740371I$ $a=0.651267+0.131314I$ $b=0.615638-0.219403I$	$1.02080+2.73193I$	0
$u=0.864126+0.313585I$ $a=0.309844+0.093672I$ $b=1.37366+0.34187I$	$-1.42714-5.94125I$	$-1.80038+5.00917I$
$u=0.864126-0.313585I$ $a=0.309844-0.093672I$ $b=1.37366-0.34187I$	$-1.42714+5.94125I$	$-1.80038-5.00917I$
$u=1.039310+0.373209I$ $a=-0.065636+0.281257I$ $b=-1.54296-0.70662I$	$-8.36607-10.64720I$	0
$u=1.039310-0.373209I$ $a=-0.065636-0.281257I$ $b=-1.54296+0.70662I$	$-8.36607+10.64720I$	0
$u=-0.626101+0.914760I$ $a=0.325312-0.028892I$ $b=0.152283-0.264499I$	$0.59153-2.55241I$	0
$u=-0.626101-0.914760I$ $a=0.325312+0.028892I$ $b=0.152283+0.264499I$	$0.59153+2.55241I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.400472 + 1.043800I$ $a = 0.03414 - 1.47370I$ $b = 0.099037 + 0.659391I$	$-2.78363 - 2.76140I$	0
$u = -0.400472 - 1.043800I$ $a = 0.03414 + 1.47370I$ $b = 0.099037 - 0.659391I$	$-2.78363 + 2.76140I$	0
$u = 0.476376 + 0.736339I$ $a = 1.265560 - 0.103489I$ $b = 0.004351 - 1.233950I$	$3.20421 - 1.15270I$	$2.54366 + 10.12386I$
$u = 0.476376 - 0.736339I$ $a = 1.265560 + 0.103489I$ $b = 0.004351 + 1.233950I$	$3.20421 + 1.15270I$	$2.54366 - 10.12386I$
$u = 0.811711 + 0.324295I$ $a = -0.395948 - 0.346003I$ $b = 1.49081 + 0.62148I$	$-9.06891 - 3.72651I$	$-4.60990 + 1.47067I$
$u = 0.811711 - 0.324295I$ $a = -0.395948 + 0.346003I$ $b = 1.49081 - 0.62148I$	$-9.06891 + 3.72651I$	$-4.60990 - 1.47067I$
$u = -0.512874 + 1.037760I$ $a = 1.84313 - 2.43983I$ $b = 1.60245 + 0.14929I$	$-9.13954 - 3.03771I$	0
$u = -0.512874 - 1.037760I$ $a = 1.84313 + 2.43983I$ $b = 1.60245 - 0.14929I$	$-9.13954 + 3.03771I$	0
$u = -0.625197 + 0.558754I$ $a = -0.748140 + 0.492702I$ $b = 1.46358 + 0.03079I$	$-7.66872 - 1.43842I$	$-12.36030 + 1.63046I$
$u = -0.625197 - 0.558754I$ $a = -0.748140 - 0.492702I$ $b = 1.46358 - 0.03079I$	$-7.66872 + 1.43842I$	$-12.36030 - 1.63046I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.788749 + 0.201384I$ $a = -0.513368 - 1.264270I$ $b = -0.132527 + 1.397610I$	$-3.90942 - 3.06813I$	$-3.25697 + 2.62072I$
$u = 0.788749 - 0.201384I$ $a = -0.513368 + 1.264270I$ $b = -0.132527 - 1.397610I$	$-3.90942 + 3.06813I$	$-3.25697 - 2.62072I$
$u = 0.255427 + 1.176880I$ $a = 1.79250 + 1.07133I$ $b = 1.90837 + 0.50499I$	$-13.78770 - 0.65730I$	0
$u = 0.255427 - 1.176880I$ $a = 1.79250 - 1.07133I$ $b = 1.90837 - 0.50499I$	$-13.78770 + 0.65730I$	0
$u = 0.416558 + 1.131590I$ $a = -1.83787 - 1.06821I$ $b = -1.42336 + 0.58360I$	$-5.18749 + 3.49319I$	0
$u = 0.416558 - 1.131590I$ $a = -1.83787 + 1.06821I$ $b = -1.42336 - 0.58360I$	$-5.18749 - 3.49319I$	0
$u = 0.698400 + 0.990081I$ $a = -0.386699 + 0.027385I$ $b = 0.004017 + 0.573210I$	$2.39963 + 7.06465I$	0
$u = 0.698400 - 0.990081I$ $a = -0.386699 - 0.027385I$ $b = 0.004017 - 0.573210I$	$2.39963 - 7.06465I$	0
$u = -1.22213$ $a = -0.185084$ $b = -1.38307$	-4.25382	0
$u = 0.473990 + 1.133450I$ $a = -1.74243 - 1.06594I$ $b = -1.70619 + 0.02634I$	$-4.78405 + 4.34186I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.473990 - 1.133450I$ $a = -1.74243 + 1.06594I$ $b = -1.70619 - 0.02634I$	$-4.78405 - 4.34186I$	0
$u = 0.330229 + 1.197830I$ $a = -0.598268 + 0.608886I$ $b = 0.36448 + 1.47439I$	$-8.15277 + 0.56922I$	0
$u = 0.330229 - 1.197830I$ $a = -0.598268 - 0.608886I$ $b = 0.36448 - 1.47439I$	$-8.15277 - 0.56922I$	0
$u = 0.219337 + 1.224320I$ $a = 1.99373 + 0.73372I$ $b = 1.390620 - 0.107878I$	$-6.53057 - 2.65488I$	0
$u = 0.219337 - 1.224320I$ $a = 1.99373 - 0.73372I$ $b = 1.390620 + 0.107878I$	$-6.53057 + 2.65488I$	0
$u = -0.523934 + 1.144670I$ $a = 1.74807 - 0.40921I$ $b = 0.856476 + 0.079544I$	$-1.26231 - 4.39904I$	0
$u = -0.523934 - 1.144670I$ $a = 1.74807 + 0.40921I$ $b = 0.856476 - 0.079544I$	$-1.26231 + 4.39904I$	0
$u = 0.532228 + 1.170640I$ $a = 0.919867 - 0.607693I$ $b = -0.24571 - 1.71682I$	$-6.75213 + 7.96693I$	0
$u = 0.532228 - 1.170640I$ $a = 0.919867 + 0.607693I$ $b = -0.24571 + 1.71682I$	$-6.75213 - 7.96693I$	0
$u = 0.580858 + 1.155040I$ $a = 1.64375 + 1.15261I$ $b = 1.50003 - 0.88828I$	$-11.5445 + 8.9372I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.580858 - 1.155040I$ $a = \quad 1.64375 - 1.15261I$ $b = \quad 1.50003 + 0.88828I$	$-11.5445 - 8.9372I$	0
$u = \quad 0.590895 + 1.169050I$ $a = \quad 1.76142 + 1.12256I$ $b = \quad 1.59367 - 0.43143I$	$-4.00028 + 11.30660I$	0
$u = \quad 0.590895 - 1.169050I$ $a = \quad 1.76142 - 1.12256I$ $b = \quad 1.59367 + 0.43143I$	$-4.00028 - 11.30660I$	0
$u = -0.637144 + 0.213090I$ $a = \quad 0.983394 - 0.020692I$ $b = \quad 0.436473 - 0.303668I$	$1.45198 - 0.17538I$	$6.99722 - 1.18140I$
$u = -0.637144 - 0.213090I$ $a = \quad 0.983394 + 0.020692I$ $b = \quad 0.436473 + 0.303668I$	$1.45198 + 0.17538I$	$6.99722 + 1.18140I$
$u = -0.272566 + 0.576168I$ $a = -2.41405 - 1.00736I$ $b = -0.635817 - 0.458472I$	$-1.175210 - 0.433161I$	$-4.73090 + 4.14534I$
$u = -0.272566 - 0.576168I$ $a = -2.41405 + 1.00736I$ $b = -0.635817 + 0.458472I$	$-1.175210 + 0.433161I$	$-4.73090 - 4.14534I$
$u = \quad 0.670259 + 1.215250I$ $a = -1.67768 - 1.18901I$ $b = -1.58802 + 0.84313I$	$-10.9823 + 16.7933I$	0
$u = \quad 0.670259 - 1.215250I$ $a = -1.67768 + 1.18901I$ $b = -1.58802 - 0.84313I$	$-10.9823 - 16.7933I$	0
$u = \quad 0.603559 + 0.095740I$ $a = \quad 0.085973 - 0.820052I$ $b = -1.250030 + 0.072344I$	$-1.98118 - 0.16998I$	$-3.50308 + 0.05920I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=\ \ 0.603559-0.095740I$ $a=\ \ 0.085973+0.820052I$ $b=-1.250030-0.072344I$	$-1.98118+0.16998I$	$-3.50308-0.05920I$
$u=-1.095700+0.886640I$ $a=-0.177881+0.508174I$ $b=-1.41985-0.12337I$	$-5.26056-3.80306I$	0
$u=-1.095700-0.886640I$ $a=-0.177881-0.508174I$ $b=-1.41985+0.12337I$	$-5.26056+3.80306I$	0
$u=\ \ 0.11898+1.44090I$ $a=-1.66657-0.44374I$ $b=-1.71694-0.48047I$	$-14.9486-6.6050I$	0
$u=\ \ 0.11898-1.44090I$ $a=-1.66657+0.44374I$ $b=-1.71694+0.48047I$	$-14.9486+6.6050I$	0
$u=-0.62573+1.38215I$ $a=-1.24381+0.74714I$ $b=-1.52635-0.26330I$	$-8.52431-6.48393I$	0
$u=-0.62573-1.38215I$ $a=-1.24381-0.74714I$ $b=-1.52635+0.26330I$	$-8.52431+6.48393I$	0
$u=-0.0151235$ $a=-43.4959$ $b=-0.551958$	-1.12640	-9.50710

II.

$$\boldsymbol{I^u_2 = \langle b,\ -u^8 + 2u^7 + \cdots + a - 1,\ u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1\rangle}$$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^8 - 2u^7 + 3u^6 - 2u^5 + 3u^4 - 2u^3 + 2u^2 + 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^8 - u^6 - u^4 + 1 \\ u^8 - u^7 + u^6 - 2u^5 + u^4 - 2u^3 - 2u - 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 2u^8 - 2u^7 + 4u^6 - 2u^5 + 4u^4 - 2u^3 + 2u^2 \\ -u^8 + u^7 - u^6 + 2u^5 - u^4 + 2u^3 + 2u + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^8 + u^6 + u^4 - 1 \\ -u^8 + u^7 - u^6 + 2u^5 - u^4 + 2u^3 + 2u + 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^8 - 2u^7 + 3u^6 - 2u^5 + 3u^4 - 2u^3 + 2u^2 + 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^8 - 9u^7 + 12u^6 - 13u^5 + 15u^4 - 15u^3 + 8u^2 - 5u - 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^9$
c_3, c_6	u^9
c_4	$(u+1)^9$
c_5	$u^9 + 5u^8 + 12u^7 + 15u^6 + 9u^5 - u^4 - 4u^3 - 2u^2 + u + 1$
c_7	$u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1$
c_8, c_{11}	$u^9 + 3u^8 + 8u^7 + 13u^6 + 17u^5 + 17u^4 + 12u^3 + 6u^2 + u - 1$
c_9, c_{12}	$u^9 + u^8 - 2u^7 - 3u^6 + u^5 + 3u^4 + 2u^3 - u - 1$
c_{10}	$u^9 + u^8 + 2u^7 + u^6 + 3u^5 + u^4 + 2u^3 + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^9$
c_3, c_6	y^9
c_5	$y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1$
c_7, c_{10}	$y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1$
c_8, c_{11}	$y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1$
c_9, c_{12}	$y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.140343 + 0.966856I$ $a = -0.939568 + 0.981640I$ $b = 0$	$-3.42837 - 2.09337I$	$-8.61953 + 2.85927I$
$u = -0.140343 - 0.966856I$ $a = -0.939568 - 0.981640I$ $b = 0$	$-3.42837 + 2.09337I$	$-8.61953 - 2.85927I$
$u = -0.628449 + 0.875112I$ $a = 2.26219 + 2.13290I$ $b = 0$	$-1.02799 - 2.45442I$	$-5.09778 + 12.45976I$
$u = -0.628449 - 0.875112I$ $a = 2.26219 - 2.13290I$ $b = 0$	$-1.02799 + 2.45442I$	$-5.09778 - 12.45976I$
$u = 0.796005 + 0.733148I$ $a = 0.119081 + 0.409451I$ $b = 0$	$2.72642 - 1.33617I$	$-5.51122 - 2.15019I$
$u = 0.796005 - 0.733148I$ $a = 0.119081 - 0.409451I$ $b = 0$	$2.72642 + 1.33617I$	$-5.51122 + 2.15019I$
$u = 0.728966 + 0.986295I$ $a = -0.016164 - 0.378317I$ $b = 0$	$1.95319 + 7.08493I$	$-9.51486 - 6.49599I$
$u = 0.728966 - 0.986295I$ $a = -0.016164 + 0.378317I$ $b = 0$	$1.95319 - 7.08493I$	$-9.51486 + 6.49599I$
$u = -0.512358$ $a = 2.14893$ $b = 0$	-0.446489	5.48680

III. $I^u_3 =$
$\langle -120a^2u - 865au + \cdots - 663a + 43,\ a^3 - a^2u + 7a^2 - 4au - 3a - 5u - 12,\ u^2 + u + 1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a \\ 0.173661a^2u + 1.25181au + \cdots + 0.959479a - 0.0622287 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.0274964a^2u - 0.0101302au + \cdots + 0.426918a + 0.548480 \\ 0.0709117a^2u + 0.552822au + \cdots + 0.416787a + 1.78292 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u+1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.0434153a^2u - 0.562952au + \cdots + 0.0101302a - 1.23444 \\ 0.0709117a^2u + 0.552822au + \cdots + 0.416787a + 1.78292 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.0274964a^2u - 0.0101302au + \cdots + 0.426918a - 1.45152 \\ 0.0709117a^2u + 0.552822au + \cdots + 0.416787a + 1.78292 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.173661a^2u - 1.25181au + \cdots + 0.0405210a + 0.0622287 \\ 0.173661a^2u + 1.25181au + \cdots + 0.959479a - 0.0622287 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.162084a^2u + 0.164978au + \cdots - 0.0955137a - 0.0752533 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{837}{691}a^2u - \frac{461}{691}a^2 + \frac{2345}{691}au - \frac{3467}{691}a + \frac{6538}{691}u + \frac{3634}{691}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6	$(y^3 + 3y^2 + 2y - 1)^2$
c_2, c_4	$(y^3 - y^2 + 2y - 1)^2$
c_5	$(y^3 - 5y^2 + 10y - 1)^2$
c_7, c_{10}, c_{11}	$(y^2 + y + 1)^3$
c_8, c_9	$y^6 + 10y^5 + 95y^4 + 48y^3 + 15y^2 + 5y + 1$
c_{12}	y^6

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -1.159960 - 0.102142I$ $b = -0.215080 - 1.307140I$	$3.02413 - 4.85801I$	$8.78307 + 4.05565I$
$u = -0.500000 + 0.866025I$ $a = \quad 1.104070 + 0.474671I$ $b = -0.215080 + 1.307140I$	$3.02413 + 0.79824I$	$-7.24138 + 7.14502I$
$u = -0.500000 + 0.866025I$ $a = -7.44411 + 0.49350I$ $b = -0.569840$	$-1.11345 - 2.02988I$	$37.9583 - 74.4205I$
$u = -0.500000 - 0.866025I$ $a = -1.159960 + 0.102142I$ $b = -0.215080 + 1.307140I$	$3.02413 + 4.85801I$	$8.78307 - 4.05565I$
$u = -0.500000 - 0.866025I$ $a = \quad 1.104070 - 0.474671I$ $b = -0.215080 - 1.307140I$	$3.02413 - 0.79824I$	$-7.24138 - 7.14502I$
$u = -0.500000 - 0.866025I$ $a = -7.44411 - 0.49350I$ $b = -0.569840$	$-1.11345 + 2.02988I$	$37.9583 + 74.4205I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^3-u^2+2u-1)^2(u^{68}+72u^{67}+\cdots-116u+1)$
c_2	$((u-1)^9)(u^3+u^2-1)^2(u^{68}-12u^{67}+\cdots+4u-1)$
c_3	$u^9(u^3-u^2+2u-1)^2(u^{68}+3u^{67}+\cdots+2048u+512)$
c_4	$((u+1)^9)(u^3-u^2+1)^2(u^{68}-12u^{67}+\cdots+4u-1)$
c_5	$(u^3-3u^2+2u+1)^2$ $\cdot(u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1)$ $\cdot(u^{68}+4u^{67}+\cdots+20u^2-1)$
c_6	$u^9(u^3+u^2+2u+1)^2(u^{68}+3u^{67}+\cdots+2048u+512)$
c_7	$(u^2+u+1)^3(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)$ $\cdot(u^{68}+5u^{67}+\cdots-61u+1)$
c_8	$(u^6-2u^5+7u^4+8u^3+7u^2+3u+1)$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{68}-8u^{67}+\cdots-679u+1423)$
c_9	$(u^6-2u^5+7u^4+8u^3+7u^2+3u+1)$ $\cdot(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)$ $\cdot(u^{68}-4u^{67}+\cdots-1569175u-179693)$
c_{10}	$(u^2-u+1)^3(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)$ $\cdot(u^{68}+5u^{67}+\cdots-61u+1)$
c_{11}	$(u^2+u+1)^3$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{68}+33u^{67}+\cdots-4365u+1)$
c_{12}	$u^6(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)$ $\cdot(u^{68}+6u^{67}+\cdots-992u+64)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^3+3y^2+2y-1)^2(y^{68}-140y^{67}+\cdots+13088y+1)$
c_2, c_4	$((y-1)^9)(y^3-y^2+2y-1)^2(y^{68}-72y^{67}+\cdots+116y+1)$
c_3, c_6	$y^9(y^3+3y^2+2y-1)^2(y^{68}-51y^{67}+\cdots-1048576y+262144)$
c_5	$(y^3-5y^2+10y-1)^2$ $\cdot(y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1)$ $\cdot(y^{68}-16y^{67}+\cdots-40y+1)$
c_7, c_{10}	$(y^2+y+1)^3$ $\cdot(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)$ $\cdot(y^{68}+33y^{67}+\cdots-4365y+1)$
c_8	$(y^6+10y^5+95y^4+48y^3+15y^2+5y+1)$ $\cdot(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)$ $\cdot(y^{68}-68y^{67}+\cdots+88237y+2024929)$
c_9	$(y^6+10y^5+95y^4+48y^3+15y^2+5y+1)$ $\cdot(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{68}-20y^{67}+\cdots-70781434415y+32289574249)$
c_{11}	$((y^2+y+1)^3)(y^9+7y^8+\cdots+13y-1)$ $\cdot(y^{68}+9y^{67}+\cdots-19115909y+1)$
c_{12}	$y^6(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)$ $\cdot(y^{68}+30y^{67}+\cdots-332800y+4096)$