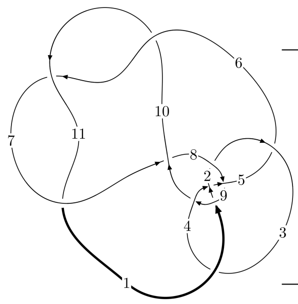
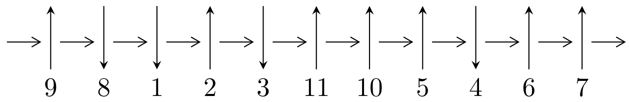
$11a_{248}$ ($K11a_{248}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -7806u^{39} - 28939u^{38} + \cdots + 1091b + 30599,\ 20501u^{39} + 69845u^{38} + \cdots + 4364a - 128043,$$
$$u^{40} + 5u^{39} + \cdots + 9u - 4\rangle$$
$$I_2^u = \langle u^{26}a + u^{26} + \cdots + b - u,\ -4u^{26}a + 4u^{26} + \cdots - a + 5,\ u^{27} - 2u^{26} + \cdots - 4u^2 - 1\rangle$$
$$I_3^u = \langle -u^{11} + 6u^9 + u^8 - 12u^7 - 5u^6 + 8u^5 + 7u^4 + 2u^3 - 2u^2 + b - 3u,$$
$$u^{12} - 6u^{10} - u^9 + 13u^8 + 4u^7 - 11u^6 - 6u^5 + u^4 + 4u^3 + 3u^2 + a - 2u - 2,$$
$$u^{13} - 2u^{12} - 5u^{11} + 10u^{10} + 10u^9 - 17u^8 - 11u^7 + 8u^6 + 7u^5 + 7u^4 - u^3 - 7u^2 - 1\rangle$$
$$I_4^u = \langle b + 1,\ a^2 - 3a + 3,\ u + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 109 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. $\boldsymbol{I_1^u = \langle -7806u^{39} - 28939u^{38} + \cdots + 1091b + 30599,\ 20501u^{39} + 69845u^{38} + \cdots + 4364a - 128043,\ u^{40} + 5u^{39} + \cdots + 9u - 4\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -4.69775u^{39} - 16.0048u^{38} + \cdots - 70.7569u + 29.3407 \\ 7.15490u^{39} + 26.5252u^{38} + \cdots + 78.3217u - 28.0467 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 12.9365u^{39} + 44.7789u^{38} + \cdots + 77.7912u - 24.2945 \\ -13.4088u^{39} - 49.4097u^{38} + \cdots - 90.1567u + 27.8689 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -7.68492u^{39} - 28.0323u^{38} + \cdots - 26.6533u + 1.57356 \\ 11.5527u^{39} + 43.6728u^{38} + \cdots + 54.5325u - 10.8295 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^4 + u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 7.93103u^{39} + 26.6478u^{38} + \cdots + 51.3183u - 18.2514 \\ -11.2988u^{39} - 41.7883u^{38} + \cdots - 83.6975u + 27.0073 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1.73854u^{39} + 0.0602658u^{38} + \cdots + 26.7647u - 19.7436 \\ -1.46379u^{39} - 2.72044u^{38} + \cdots - 15.8863u + 10.2997 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1.73854u^{39} + 0.0602658u^{38} + \cdots + 26.7647u - 19.7436 \\ -1.46379u^{39} - 2.72044u^{38} + \cdots - 15.8863u + 10.2997 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{10012}{1091}u^{39} - \frac{44785}{1091}u^{38} + \cdots + \frac{78319}{1091}u - \frac{64130}{1091}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{40} - u^{39} + \cdots + 2u - 1$
c_2, c_9	$u^{40} + 2u^{38} + \cdots - u - 1$
c_3, c_5	$u^{40} + 6u^{39} + \cdots - 23u + 1$
c_4	$u^{40} + 22u^{39} + \cdots + 9u + 2$
c_6, c_{10}, c_{11}	$u^{40} - 5u^{39} + \cdots - 9u - 4$
c_7	$u^{40} + 15u^{39} + \cdots + 89u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{40} + 17y^{39} + \cdots + 44y + 1$
c_2, c_9	$y^{40} + 4y^{39} + \cdots - 23y + 1$
c_3, c_5	$y^{40} - 24y^{39} + \cdots - 199y + 1$
c_4	$y^{40} + 28y^{38} + \cdots - 5y + 4$
c_6, c_{10}, c_{11}	$y^{40} - 37y^{39} + \cdots - 9y + 16$
c_7	$y^{40} - y^{39} + \cdots - 937y + 16$

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.833239+0.478940I$		
$a=$	$1.36899+1.05581I$	$-0.67356-9.11808I$	$3.09330+5.04292I$
$b=$	$0.113249-0.613771I$		
$u=$	$0.833239-0.478940I$		
$a=$	$1.36899-1.05581I$	$-0.67356+9.11808I$	$3.09330-5.04292I$
$b=$	$0.113249+0.613771I$		
$u=$	$0.944818+0.044872I$		
$a=$	$-1.88518-0.83264I$	$-1.64126-1.68382I$	$-2.62360+4.24820I$
$b=$	$1.092540+0.590515I$		
$u=$	$0.944818-0.044872I$		
$a=$	$-1.88518+0.83264I$	$-1.64126+1.68382I$	$-2.62360-4.24820I$
$b=$	$1.092540-0.590515I$		
$u=$	$1.045020+0.426092I$		
$a=$	$1.40350-0.24037I$	$-1.51874+7.98713I$	$1.00079-8.43785I$
$b=$	$-0.777991-0.700678I$		
$u=$	$1.045020-0.426092I$		
$a=$	$1.40350+0.24037I$	$-1.51874-7.98713I$	$1.00079+8.43785I$
$b=$	$-0.777991+0.700678I$		
$u=$	$0.127215+0.839082I$		
$a=$	$-0.212294+0.072049I$	$-4.35513-3.45950I$	$-3.88332+4.09172I$
$b=$	$-0.507546+1.079890I$		
$u=$	$0.127215-0.839082I$		
$a=$	$-0.212294-0.072049I$	$-4.35513+3.45950I$	$-3.88332-4.09172I$
$b=$	$-0.507546-1.079890I$		
$u=$	$0.277504+0.801125I$		
$a=$	$0.171151-0.043121I$	$-2.45998+13.64270I$	$1.03420-9.07195I$
$b=$	$0.77473+1.69376I$		
$u=$	$0.277504-0.801125I$		
$a=$	$0.171151+0.043121I$	$-2.45998-13.64270I$	$1.03420+9.07195I$
$b=$	$0.77473-1.69376I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.777292$ $a = -0.568128$ $b = -0.113354$	1.36099	8.46400
$u = 0.225491 + 0.702834I$ $a = 0.212358 + 0.335622I$ $b = -0.39127 - 1.71232I$	$-3.63204 + 5.12135I$	$-5.87713 - 8.64312I$
$u = 0.225491 - 0.702834I$ $a = 0.212358 - 0.335622I$ $b = -0.39127 + 1.71232I$	$-3.63204 - 5.12135I$	$-5.87713 + 8.64312I$
$u = 0.290696 + 0.655817I$ $a = -0.279795 + 0.357972I$ $b = 0.417996 - 0.903025I$	$-3.25229 + 1.41438I$	$-4.70580 - 2.22096I$
$u = 0.290696 - 0.655817I$ $a = -0.279795 - 0.357972I$ $b = 0.417996 + 0.903025I$	$-3.25229 - 1.41438I$	$-4.70580 + 2.22096I$
$u = -1.283570 + 0.210194I$ $a = 0.89404 - 1.55425I$ $b = -0.229292 + 0.859047I$	$1.12425 - 2.76728I$	$0. + 3.97586I$
$u = -1.283570 - 0.210194I$ $a = 0.89404 + 1.55425I$ $b = -0.229292 - 0.859047I$	$1.12425 + 2.76728I$	$0. - 3.97586I$
$u = 1.317130 + 0.218392I$ $a = -2.22707 - 0.75204I$ $b = 2.17192 + 1.88185I$	$1.43716 + 2.94730I$	0
$u = 1.317130 - 0.218392I$ $a = -2.22707 + 0.75204I$ $b = 2.17192 - 1.88185I$	$1.43716 - 2.94730I$	0
$u = 0.646576 + 0.028959I$ $a = -1.71193 - 0.86713I$ $b = 0.662046 + 0.361055I$	$-1.67832 - 1.69625I$	$-1.45396 + 4.31564I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.646576 - 0.028959I$ $a = -1.71193 + 0.86713I$ $b = 0.662046 - 0.361055I$	$-1.67832 + 1.69625I$	$-1.45396 - 4.31564I$
$u = -1.307710 + 0.361702I$ $a = -0.730497 + 0.872523I$ $b = -0.038517 - 0.940647I$	$0.125718 - 0.859000I$	0
$u = -1.307710 - 0.361702I$ $a = -0.730497 - 0.872523I$ $b = -0.038517 + 0.940647I$	$0.125718 + 0.859000I$	0
$u = -1.374750 + 0.100729I$ $a = -0.937295 + 0.058184I$ $b = 0.401012 + 0.417839I$	$4.00380 + 0.89695I$	0
$u = -1.374750 - 0.100729I$ $a = -0.937295 - 0.058184I$ $b = 0.401012 - 0.417839I$	$4.00380 - 0.89695I$	0
$u = 1.395900 + 0.204775I$ $a = 1.022420 + 0.746778I$ $b = -0.98876 - 1.47035I$	$5.90256 + 4.07376I$	0
$u = 1.395900 - 0.204775I$ $a = 1.022420 - 0.746778I$ $b = -0.98876 + 1.47035I$	$5.90256 - 4.07376I$	0
$u = -1.38885 + 0.28086I$ $a = 2.23443 - 1.30007I$ $b = -1.61945 + 1.79021I$	$1.50108 - 8.69698I$	0
$u = -1.38885 - 0.28086I$ $a = 2.23443 + 1.30007I$ $b = -1.61945 - 1.79021I$	$1.50108 + 8.69698I$	0
$u = -0.024475 + 0.578228I$ $a = 1.202030 + 0.432697I$ $b = 0.84787 - 1.24338I$	$-2.81557 - 0.07740I$	$-5.03252 - 0.22412I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.024475 - 0.578228I$ $a = \ 1.202030 - 0.432697I$ $b = \ 0.84787 + 1.24338I$	$-2.81557 + 0.07740I$	$-5.03252 + 0.22412I$
$u = -0.293128 + 0.498415I$ $a = -0.724756 + 0.441160I$ $b = -0.324784 + 0.529368I$	$0.54657 - 1.42879I$	$5.31935 + 4.51277I$
$u = -0.293128 - 0.498415I$ $a = -0.724756 - 0.441160I$ $b = -0.324784 - 0.529368I$	$0.54657 + 1.42879I$	$5.31935 - 4.51277I$
$u = -1.43383 + 0.26362I$ $a = \ 0.738341 - 1.202280I$ $b = -0.54490 + 1.45255I$	$2.31251 - 4.79347I$	0
$u = -1.43383 - 0.26362I$ $a = \ 0.738341 + 1.202280I$ $b = -0.54490 - 1.45255I$	$2.31251 + 4.79347I$	0
$u = -1.42214 + 0.32372I$ $a = -2.22593 + 1.15650I$ $b = \ 1.72849 - 2.18761I$	$2.9545 - 17.7145I$	0
$u = -1.42214 - 0.32372I$ $a = -2.22593 - 1.15650I$ $b = \ 1.72849 + 2.18761I$	$2.9545 + 17.7145I$	0
$u = -1.51106 + 0.03418I$ $a = -0.041421 + 0.318529I$ $b = \ 0.551162 - 0.994771I$	$7.13383 + 7.90887I$	0
$u = -1.51106 - 0.03418I$ $a = -0.041421 - 0.318529I$ $b = \ 0.551162 + 0.994771I$	$7.13383 - 7.90887I$	0
$u = \ 1.64915$ $a = \ 0.275951$ $b = -0.563647$	9.99305	0

II. $I_2^u =$
$\langle u^{26}a+u^{26}+\cdots+b-u,\ -4u^{26}a+4u^{26}+\cdots-a+5,\ u^{27}-2u^{26}+\cdots-4u^2-1\rangle$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$

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

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

$$a_4 = \begin{pmatrix}a\\-u^{26}a-u^{26}+\cdots+au+u\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-u^{26}a-2u^{26}+\cdots-u-2\\u^{26}a-u^{26}+\cdots+a+2u\end{pmatrix}$$

$$a_5 = \begin{pmatrix}2u^{26}a-3u^{26}+\cdots+a-1\\u^{26}-2u^{25}+\cdots-a+2\end{pmatrix}$$

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

$$a_8 = \begin{pmatrix}-u^4+u^2+1\\u^4-2u^2\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-3u^{26}+3u^{25}+\cdots+a-2\\u^{26}a-u^{25}a+\cdots+3u+1\end{pmatrix}$$

$$a_9 = \begin{pmatrix}u^{26}a-2u^{26}+\cdots-4u-1\\3u^{26}-2u^{25}+\cdots-a+2\end{pmatrix}$$

$$a_9 = \begin{pmatrix}u^{26}a-2u^{26}+\cdots-4u-1\\3u^{26}-2u^{25}+\cdots-a+2\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -u^{26}+3u^{25}+11u^{24}-26u^{23}-56u^{22}+83u^{21}+159u^{20}-80u^{19}-221u^{18}-163u^{17}-35u^{16}+448u^{15}+606u^{14}-142u^{13}-752u^{12}-576u^{11}+66u^{10}+578u^9+432u^8+26u^7-126u^6-129u^5-81u^4-38u^3-27u^2-5u+3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{54} - 4u^{53} + \cdots - u + 1$
c_2, c_9	$u^{54} - 2u^{53} + \cdots - 109u + 37$
c_3, c_5	$u^{54} - 3u^{53} + \cdots + 18u + 27$
c_4	$(u^{27} - 13u^{26} + \cdots - u + 2)^2$
c_6, c_{10}, c_{11}	$(u^{27} + 2u^{26} + \cdots + 4u^2 + 1)^2$
c_7	$(u^{27} - 9u^{26} + \cdots + 37u - 8)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{54} - 12y^{53} + \cdots + 5y + 1$
c_2, c_9	$y^{54} + 50y^{52} + \cdots + 67373y + 1369$
c_3, c_5	$y^{54} + 13y^{53} + \cdots - 6318y + 729$
c_4	$(y^{27} - 3y^{26} + \cdots + 53y - 4)^2$
c_6, c_{10}, c_{11}	$(y^{27} - 24y^{26} + \cdots - 8y - 1)^2$
c_7	$(y^{27} + 5y^{26} + \cdots - 375y - 64)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.895940 + 0.471258I$ $a = 0.342281 - 0.519659I$ $b = -0.095449 + 0.261445I$	$1.130920 + 0.684553I$	$13.8481 - 5.2893I$
$u = -0.895940 + 0.471258I$ $a = -1.183610 + 0.725180I$ $b = -0.274271 - 0.648456I$	$1.130920 + 0.684553I$	$13.8481 - 5.2893I$
$u = -0.895940 - 0.471258I$ $a = 0.342281 + 0.519659I$ $b = -0.095449 - 0.261445I$	$1.130920 - 0.684553I$	$13.8481 + 5.2893I$
$u = -0.895940 - 0.471258I$ $a = -1.183610 - 0.725180I$ $b = -0.274271 + 0.648456I$	$1.130920 - 0.684553I$	$13.8481 + 5.2893I$
$u = -1.100980 + 0.299749I$ $a = 0.95742 - 1.49151I$ $b = -0.305719 + 1.067790I$	$-0.896800 + 0.835412I$	$-3.62755 - 4.72274I$
$u = -1.100980 + 0.299749I$ $a = -2.01018 - 0.00904I$ $b = 1.02376 - 1.27878I$	$-0.896800 + 0.835412I$	$-3.62755 - 4.72274I$
$u = -1.100980 - 0.299749I$ $a = 0.95742 + 1.49151I$ $b = -0.305719 - 1.067790I$	$-0.896800 - 0.835412I$	$-3.62755 + 4.72274I$
$u = -1.100980 - 0.299749I$ $a = -2.01018 + 0.00904I$ $b = 1.02376 + 1.27878I$	$-0.896800 - 0.835412I$	$-3.62755 + 4.72274I$
$u = -0.258632 + 0.812574I$ $a = -0.204845 + 0.236106I$ $b = -0.67915 + 1.58038I$	$-0.86178 - 5.25397I$	$6.46955 + 10.01314I$
$u = -0.258632 + 0.812574I$ $a = -0.036879 + 0.212663I$ $b = 0.520153 - 0.752899I$	$-0.86178 - 5.25397I$	$6.46955 + 10.01314I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.258632 - 0.812574I$ $a = -0.204845 - 0.236106I$ $b = -0.67915 - 1.58038I$	$-0.86178 + 5.25397I$	$6.46955 - 10.01314I$
$u = -0.258632 - 0.812574I$ $a = -0.036879 - 0.212663I$ $b = 0.520153 + 0.752899I$	$-0.86178 + 5.25397I$	$6.46955 - 10.01314I$
$u = -0.135996 + 0.743408I$ $a = 0.688838 + 0.344087I$ $b = 0.74927 + 1.65652I$	$-3.79952 - 4.67674I$	$-5.91242 + 7.08419I$
$u = -0.135996 + 0.743408I$ $a = -0.008951 + 0.347544I$ $b = 0.87796 - 1.45827I$	$-3.79952 - 4.67674I$	$-5.91242 + 7.08419I$
$u = -0.135996 - 0.743408I$ $a = 0.688838 - 0.344087I$ $b = 0.74927 - 1.65652I$	$-3.79952 + 4.67674I$	$-5.91242 - 7.08419I$
$u = -0.135996 - 0.743408I$ $a = -0.008951 - 0.347544I$ $b = 0.87796 + 1.45827I$	$-3.79952 + 4.67674I$	$-5.91242 - 7.08419I$
$u = 1.275050 + 0.128798I$ $a = 0.872080 - 0.946956I$ $b = -0.44926 + 1.70261I$	$3.61252 - 2.75180I$	$4.02480 + 5.63147I$
$u = 1.275050 + 0.128798I$ $a = -1.61610 - 2.37871I$ $b = 0.40151 + 2.10435I$	$3.61252 - 2.75180I$	$4.02480 + 5.63147I$
$u = 1.275050 - 0.128798I$ $a = 0.872080 + 0.946956I$ $b = -0.44926 - 1.70261I$	$3.61252 + 2.75180I$	$4.02480 - 5.63147I$
$u = 1.275050 - 0.128798I$ $a = -1.61610 + 2.37871I$ $b = 0.40151 - 2.10435I$	$3.61252 + 2.75180I$	$4.02480 - 5.63147I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.426561+0.478609I$ $a=-0.264904+0.981766I$ $b=-0.637652+0.148109I$	$0.44505-1.73895I$	$7.45580+5.77840I$
$u=-0.426561+0.478609I$ $a=-1.227590+0.092870I$ $b=-0.262831+0.693605I$	$0.44505-1.73895I$	$7.45580+5.77840I$
$u=-0.426561-0.478609I$ $a=-0.264904-0.981766I$ $b=-0.637652-0.148109I$	$0.44505+1.73895I$	$7.45580-5.77840I$
$u=-0.426561-0.478609I$ $a=-1.227590-0.092870I$ $b=-0.262831-0.693605I$	$0.44505+1.73895I$	$7.45580-5.77840I$
$u=-1.361910+0.175704I$ $a=0.121170+0.544702I$ $b=-0.840179+0.397373I$	$5.91990+0.72025I$	$11.02491-0.63973I$
$u=-1.361910+0.175704I$ $a=-2.78369+0.64886I$ $b=2.75677-0.87534I$	$5.91990+0.72025I$	$11.02491-0.63973I$
$u=-1.361910-0.175704I$ $a=0.121170-0.544702I$ $b=-0.840179-0.397373I$	$5.91990-0.72025I$	$11.02491+0.63973I$
$u=-1.361910-0.175704I$ $a=-2.78369-0.64886I$ $b=2.75677+0.87534I$	$5.91990-0.72025I$	$11.02491+0.63973I$
$u=1.346310+0.301034I$ $a=0.93357+1.81656I$ $b=0.46852-1.68017I$	$0.87383+8.44603I$	$-0.29895-8.39876I$
$u=1.346310+0.301034I$ $a=-2.51803-0.62945I$ $b=2.12120+1.38215I$	$0.87383+8.44603I$	$-0.29895-8.39876I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.346310 - 0.301034I$ $a = 0.93357 - 1.81656I$ $b = 0.46852 + 1.68017I$	$0.87383 - 8.44603I$	$-0.29895 + 8.39876I$
$u = 1.346310 - 0.301034I$ $a = -2.51803 + 0.62945I$ $b = 2.12120 - 1.38215I$	$0.87383 - 8.44603I$	$-0.29895 + 8.39876I$
$u = -1.361280 + 0.230867I$ $a = 0.76323 + 1.29097I$ $b = -0.68764 - 1.90684I$	$5.17654 - 7.89313I$	$8.62044 + 9.21586I$
$u = -1.361280 + 0.230867I$ $a = 2.95892 - 1.08916I$ $b = -2.13759 + 2.13430I$	$5.17654 - 7.89313I$	$8.62044 + 9.21586I$
$u = -1.361280 - 0.230867I$ $a = 0.76323 - 1.29097I$ $b = -0.68764 + 1.90684I$	$5.17654 + 7.89313I$	$8.62044 - 9.21586I$
$u = -1.361280 - 0.230867I$ $a = 2.95892 + 1.08916I$ $b = -2.13759 - 2.13430I$	$5.17654 + 7.89313I$	$8.62044 - 9.21586I$
$u = 1.392250 + 0.184425I$ $a = 0.689778 + 0.165914I$ $b = -0.713590 - 1.011530I$	$6.04501 + 4.08549I$	$10.80221 - 3.62417I$
$u = 1.392250 + 0.184425I$ $a = 1.47187 + 1.27394I$ $b = -1.51868 - 1.81027I$	$6.04501 + 4.08549I$	$10.80221 - 3.62417I$
$u = 1.392250 - 0.184425I$ $a = 0.689778 - 0.165914I$ $b = -0.713590 + 1.011530I$	$6.04501 - 4.08549I$	$10.80221 + 3.62417I$
$u = 1.392250 - 0.184425I$ $a = 1.47187 - 1.27394I$ $b = -1.51868 + 1.81027I$	$6.04501 - 4.08549I$	$10.80221 + 3.62417I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.162222+0.561060I$ $a = -0.051560-0.625386I$ $b = -0.96597-1.94808I$	$0.32804+4.95240I$	$2.66900-10.41191I$
$u = 0.162222+0.561060I$ $a = 1.86160+0.59224I$ $b = -0.603163+0.183472I$	$0.32804+4.95240I$	$2.66900-10.41191I$
$u = 0.162222-0.561060I$ $a = -0.051560+0.625386I$ $b = -0.96597+1.94808I$	$0.32804-4.95240I$	$2.66900+10.41191I$
$u = 0.162222-0.561060I$ $a = 1.86160-0.59224I$ $b = -0.603163-0.183472I$	$0.32804-4.95240I$	$2.66900+10.41191I$
$u = 1.41446+0.33004I$ $a = -1.46356-0.33947I$ $b = 1.30700+0.85510I$	$4.46105+9.38162I$	$9.06666-9.66600I$
$u = 1.41446+0.33004I$ $a = 1.96789+1.01697I$ $b = -1.41394-2.11422I$	$4.46105+9.38162I$	$9.06666-9.66600I$
$u = 1.41446-0.33004I$ $a = -1.46356+0.33947I$ $b = 1.30700-0.85510I$	$4.46105-9.38162I$	$9.06666+9.66600I$
$u = 1.41446-0.33004I$ $a = 1.96789-1.01697I$ $b = -1.41394+2.11422I$	$4.46105-9.38162I$	$9.06666+9.66600I$
$u = 1.48928$ $a = 0.414877+0.101829I$ $b = -0.663673-0.708724I$	9.10414	14.2140
$u = 1.48928$ $a = 0.414877-0.101829I$ $b = -0.663673+0.708724I$	9.10414	14.2140

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.206359 + 0.377187I$ $a = 0.000240 - 1.391780I$ $b = 0.959931 + 1.036890I$	$0.97705 - 2.90650I$	$6.25021 - 1.54831I$
$u = 0.206359 + 0.377187I$ $a = -2.67387 - 0.24264I$ $b = -0.437309 + 0.531753I$	$0.97705 - 2.90650I$	$6.25021 - 1.54831I$
$u = 0.206359 - 0.377187I$ $a = 0.000240 + 1.391780I$ $b = 0.959931 - 1.036890I$	$0.97705 + 2.90650I$	$6.25021 + 1.54831I$
$u = 0.206359 - 0.377187I$ $a = -2.67387 + 0.24264I$ $b = -0.437309 - 0.531753I$	$0.97705 + 2.90650I$	$6.25021 + 1.54831I$

III.
$$\boldsymbol{I^u_3 = \langle -u^{11}+6u^9+\cdots+b-3u,\ u^{12}-6u^{10}+\cdots+a-2,\ u^{13}-2u^{12}+\cdots-7u^2-1\rangle}$$

(i) Arc colorings

$$a_6 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}u\\-u^3+u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-u^{12}+6u^{10}+\cdots+2u+2\\u^{11}-6u^9-u^8+12u^7+5u^6-8u^5-7u^4-2u^3+2u^2+3u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-4u^{12}+2u^{11}+\cdots-20u^3-21u^2\\2u^{12}-u^{11}+\cdots+4u+2\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-2u^{12}+13u^{10}+\cdots-10u-1\\u^{12}-u^{11}-6u^{10}+4u^9+13u^8-3u^7-10u^6-5u^5-3u^4+6u^3+6u^2+2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-u^4+u^2+1\\u^4-2u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-2u^{12}+u^{11}+\cdots+3u+1\\u^{12}-6u^{10}+\cdots+4u+1\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-3u^{12}+3u^{11}+\cdots+u-4\\u^{12}-u^{11}-6u^{10}+4u^9+14u^8-3u^7-14u^6-6u^5+2u^4+8u^3+5u^2-u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-3u^{12}+3u^{11}+\cdots+u-4\\u^{12}-u^{11}-6u^{10}+4u^9+14u^8-3u^7-14u^6-6u^5+2u^4+8u^3+5u^2-u\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -12u^{12}+3u^{11}+69u^{10}+4u^9-142u^8-61u^7+92u^6+111u^5+61u^4-41u^3-73u^2-22u-10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{13} + u^{12} + \cdots - 2u^2 + 1$
c_2, c_9	$u^{13} - 2u^{11} + \cdots + u + 1$
c_3, c_5	$u^{13} + 4u^{12} + \cdots + 7u + 1$
c_4	$u^{13} - 9u^{12} + \cdots + 22u - 3$
c_6	$u^{13} - 2u^{12} + \cdots - 7u^2 - 1$
c_7	$u^{13} + 6u^{12} + \cdots + 8u + 3$
c_{10}, c_{11}	$u^{13} + 2u^{12} + \cdots + 7u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{13} - 7y^{12} + \cdots + 4y - 1$
c_2, c_9	$y^{13} - 4y^{12} + \cdots + 7y - 1$
c_3, c_5	$y^{13} + 8y^{12} + \cdots + 11y - 1$
c_4	$y^{13} + 3y^{12} + \cdots - 38y - 9$
c_6, c_{10}, c_{11}	$y^{13} - 14y^{12} + \cdots - 14y - 1$
c_7	$y^{13} - 6y^{12} + \cdots - 122y - 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.009960 + 0.393104I$ $a = 0.925275 - 0.638185I$ $b = -0.104514 + 0.740294I$	$0.418219 + 0.647136I$	$0.16669 - 3.99472I$
$u = -1.009960 - 0.393104I$ $a = 0.925275 + 0.638185I$ $b = -0.104514 - 0.740294I$	$0.418219 - 0.647136I$	$0.16669 + 3.99472I$
$u = -0.167884 + 0.751728I$ $a = -0.226076 - 0.027387I$ $b = 0.47713 - 1.33789I$	$-2.18684 - 4.76062I$	$0.16967 + 6.96566I$
$u = -0.167884 - 0.751728I$ $a = -0.226076 + 0.027387I$ $b = 0.47713 + 1.33789I$	$-2.18684 + 4.76062I$	$0.16967 - 6.96566I$
$u = 1.341150 + 0.144131I$ $a = 1.56947 + 0.55075I$ $b = -0.882764 - 0.005150I$	$4.89774 - 1.83075I$	$8.30741 + 4.84620I$
$u = 1.341150 - 0.144131I$ $a = 1.56947 - 0.55075I$ $b = -0.882764 + 0.005150I$	$4.89774 + 1.83075I$	$8.30741 - 4.84620I$
$u = -1.374030 + 0.142033I$ $a = -0.56717 + 1.54087I$ $b = 0.23741 - 2.17678I$	$5.16744 - 5.48401I$	$6.26872 + 7.46655I$
$u = -1.374030 - 0.142033I$ $a = -0.56717 - 1.54087I$ $b = 0.23741 + 2.17678I$	$5.16744 + 5.48401I$	$6.26872 - 7.46655I$
$u = 1.365520 + 0.295205I$ $a = -2.00613 - 0.78110I$ $b = 1.34623 + 1.31239I$	$2.66514 + 8.52224I$	$6.00968 - 8.13315I$
$u = 1.365520 - 0.295205I$ $a = -2.00613 + 0.78110I$ $b = 1.34623 - 1.31239I$	$2.66514 - 8.52224I$	$6.00968 + 8.13315I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.015927 + 0.356982I$ $a = 2.40486 + 0.90799I$ $b = -0.330299 + 1.152730I$	$0.51888 + 3.68063I$	$0.09698 - 6.26701I$
$u = 0.015927 - 0.356982I$ $a = 2.40486 - 0.90799I$ $b = -0.330299 - 1.152730I$	$0.51888 - 3.68063I$	$0.09698 + 6.26701I$
$u = 1.65857$ $a = -0.200450$ $b = 0.513607$	9.93750	-69.0380

IV. $I_4^u = \langle b+1,\ a^2-3a+3,\ u+1 \rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a \\ -1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} a-1 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} a \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 2a-3 \\ -a+1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -2a+4 \\ a-2 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -2a+4 \\ a-2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = \quad 1.50000 + 0.86603I$ $b = -1.00000$	0	3.00000
$u = -1.00000$ $a = \quad 1.50000 - 0.86603I$ $b = -1.00000$	0	3.00000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_8	$(u^2-u+1)(u^{13}+u^{12}+\cdots-2u^2+1)(u^{40}-u^{39}+\cdots+2u-1)$ $\cdot(u^{54}-4u^{53}+\cdots-u+1)$
c_2, c_9	$(u^2-u+1)(u^{13}-2u^{11}+\cdots+u+1)(u^{40}+2u^{38}+\cdots-u-1)$ $\cdot(u^{54}-2u^{53}+\cdots-109u+37)$
c_3, c_5	$((u+1)^2)(u^{13}+4u^{12}+\cdots+7u+1)(u^{40}+6u^{39}+\cdots-23u+1)$ $\cdot(u^{54}-3u^{53}+\cdots+18u+27)$
c_4	$u^2(u^{13}-9u^{12}+\cdots+22u-3)(u^{27}-13u^{26}+\cdots-u+2)^2$ $\cdot(u^{40}+22u^{39}+\cdots+9u+2)$
c_6	$((u+1)^2)(u^{13}-2u^{12}+\cdots-7u^2-1)(u^{27}+2u^{26}+\cdots+4u^2+1)^2$ $\cdot(u^{40}-5u^{39}+\cdots-9u-4)$
c_7	$u^2(u^{13}+6u^{12}+\cdots+8u+3)(u^{27}-9u^{26}+\cdots+37u-8)^2$ $\cdot(u^{40}+15u^{39}+\cdots+89u+4)$
c_{10}, c_{11}	$((u-1)^2)(u^{13}+2u^{12}+\cdots+7u^2+1)(u^{27}+2u^{26}+\cdots+4u^2+1)^2$ $\cdot(u^{40}-5u^{39}+\cdots-9u-4)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_8	$(y^2+y+1)(y^{13}-7y^{12}+\cdots+4y-1)(y^{40}+17y^{39}+\cdots+44y+1)$ $\cdot(y^{54}-12y^{53}+\cdots+5y+1)$
c_2, c_9	$(y^2+y+1)(y^{13}-4y^{12}+\cdots+7y-1)(y^{40}+4y^{39}+\cdots-23y+1)$ $\cdot(y^{54}+50y^{52}+\cdots+67373y+1369)$
c_3, c_5	$((y-1)^2)(y^{13}+8y^{12}+\cdots+11y-1)(y^{40}-24y^{39}+\cdots-199y+1)$ $\cdot(y^{54}+13y^{53}+\cdots-6318y+729)$
c_4	$y^2(y^{13}+3y^{12}+\cdots-38y-9)(y^{27}-3y^{26}+\cdots+53y-4)^2$ $\cdot(y^{40}+28y^{38}+\cdots-5y+4)$
c_6, c_{10}, c_{11}	$((y-1)^2)(y^{13}-14y^{12}+\cdots-14y-1)(y^{27}-24y^{26}+\cdots-8y-1)^2$ $\cdot(y^{40}-37y^{39}+\cdots-9y+16)$
c_7	$y^2(y^{13}-6y^{12}+\cdots-122y-9)(y^{27}+5y^{26}+\cdots-375y-64)^2$ $\cdot(y^{40}-y^{39}+\cdots-937y+16)$