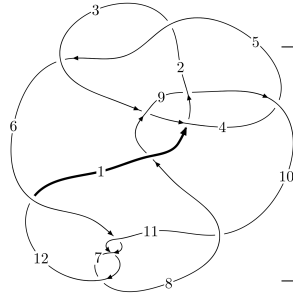
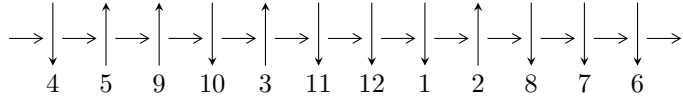


12a<sub>0852</sub> (K12a<sub>0852</sub>)



A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**

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

**Ideals for irreducible components<sup>2</sup> of  $X_{\text{par}}$**

$$I_1^u = \langle 2.17522 \times 10^{33} u^{103} - 2.37686 \times 10^{33} u^{102} + \dots + 1.19004 \times 10^{34} b + 7.34507 \times 10^{33}, \\ 1.83944 \times 10^{33} u^{103} + 7.61714 \times 10^{33} u^{102} + \dots + 1.19004 \times 10^{34} a + 1.97168 \times 10^{34}, u^{104} - 2u^{103} + \dots + u + 1 \rangle \\ I_2^u = \langle b - 1, a, u - 1 \rangle$$

\* 2 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 105 representations.

<sup>1</sup>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>).

<sup>2</sup>All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

$$\text{I. } I_1^u = \langle 2.18 \times 10^{33} u^{103} - 2.38 \times 10^{33} u^{102} + \dots + 1.19 \times 10^{34} b + 7.35 \times 10^{33}, 1.84 \times 10^{33} u^{103} + 7.62 \times 10^{33} u^{102} + \dots + 1.19 \times 10^{34} a + 1.97 \times 10^{34}, u^{104} - 2u^{103} + \dots + u + 1 \rangle$$

(i) Arc colorings

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

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

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

$$a_{12} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} u^3 - 2u \\ -u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.154570u^{103} - 0.640077u^{102} + \dots - 8.49712u - 1.65682 \\ -0.182786u^{103} + 0.199730u^{102} + \dots + 1.15418u - 0.617214 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.564505u^{103} + 0.239962u^{102} + \dots + 6.85734u + 1.98992 \\ 0.268856u^{103} - 0.201079u^{102} + \dots - 1.38328u + 0.531144 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.997344u^{103} - 1.00004u^{102} + \dots - 3.56627u - 0.283414 \\ 0.827859u^{103} + 0.00269680u^{102} + \dots - 1.54179u - 0.827859 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.560773u^{103} + 0.239997u^{102} + \dots + 6.85749u + 1.98999 \\ 1.30153u^{103} - 1.39251u^{102} + \dots - 5.85230u - 1.30153 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^{10} - 5u^8 + 8u^6 - 3u^4 - 3u^2 + 1 \\ -u^{10} + 4u^8 - 5u^6 + 3u^2 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $-0.780657u^{103} + 6.36032u^{102} + \dots + 24.6150u + 10.1407$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{104} - 17u^{103} + \dots - 6u + 2$
$c_2, c_5$	$u^{104} + 2u^{103} + \dots - 17u - 1$
$c_3$	$u^{104} + 45u^{102} + \dots - 223u + 19$
$c_4$	$u^{104} + 2u^{103} + \dots + 89u + 29$
$c_6, c_7, c_{11}$	$u^{104} + 2u^{103} + \dots - u + 1$
$c_8$	$u^{104} - 13u^{102} + \dots + 325815u + 31313$
$c_9$	$u^{104} + 4u^{103} + \dots - u - 1$
$c_{10}, c_{12}$	$u^{104} - 3u^{103} + \dots + 1056u - 288$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{104} - 9y^{103} + \dots - 80y + 4$
$c_2, c_5$	$y^{104} - 66y^{103} + \dots - 21y + 1$
$c_3$	$y^{104} + 90y^{103} + \dots - 10893y + 361$
$c_4$	$y^{104} + 106y^{103} + \dots + 9595y + 841$
$c_6, c_7, c_{11}$	$y^{104} - 86y^{103} + \dots - 5y + 1$
$c_8$	$y^{104} - 26y^{103} + \dots - 64509499981y + 980503969$
$c_9$	$y^{104} - 18y^{103} + \dots - 5y + 1$
$c_{10}, c_{12}$	$y^{104} + 63y^{103} + \dots - 965952y + 82944$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.819897 + 0.339888I$ $a = -0.618092 - 0.371458I$ $b = 0.847810 + 0.105674I$	$-0.757428 + 0.259701I$	0
$u = 0.819897 - 0.339888I$ $a = -0.618092 + 0.371458I$ $b = 0.847810 - 0.105674I$	$-0.757428 - 0.259701I$	0
$u = -1.086970 + 0.359710I$ $a = -1.360150 - 0.080546I$ $b = 1.34875 - 0.55310I$	$2.38106 - 9.69349I$	0
$u = -1.086970 - 0.359710I$ $a = -1.360150 + 0.080546I$ $b = 1.34875 + 0.55310I$	$2.38106 + 9.69349I$	0
$u = -1.105020 + 0.306891I$ $a = -0.199413 - 0.213073I$ $b = 0.016100 + 1.138540I$	$-1.77784 - 3.79314I$	0
$u = -1.105020 - 0.306891I$ $a = -0.199413 + 0.213073I$ $b = 0.016100 - 1.138540I$	$-1.77784 + 3.79314I$	0
$u = 1.131960 + 0.250386I$ $a = -0.639350 - 0.213959I$ $b = 0.015696 - 0.221086I$	$-1.278260 - 0.518432I$	0
$u = 1.131960 - 0.250386I$ $a = -0.639350 + 0.213959I$ $b = 0.015696 + 0.221086I$	$-1.278260 + 0.518432I$	0
$u = 0.136123 + 0.826445I$ $a = -2.34710 - 0.70307I$ $b = 1.055580 - 0.268217I$	$4.02249 - 5.82467I$	$0. + 9.76873I$
$u = 0.136123 - 0.826445I$ $a = -2.34710 + 0.70307I$ $b = 1.055580 + 0.268217I$	$4.02249 + 5.82467I$	$0. - 9.76873I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.012968 + 0.834781I$ $a = -2.87263 + 0.51707I$ $b = 1.295250 - 0.298176I$	$9.32839 - 4.63448I$	$4.37030 + 4.68852I$
$u = -0.012968 - 0.834781I$ $a = -2.87263 - 0.51707I$ $b = 1.295250 + 0.298176I$	$9.32839 + 4.63448I$	$4.37030 - 4.68852I$
$u = 1.107320 + 0.388542I$ $a = -1.317400 - 0.103258I$ $b = 1.032010 + 0.213362I$	$1.05685 + 1.43205I$	0
$u = 1.107320 - 0.388542I$ $a = -1.317400 + 0.103258I$ $b = 1.032010 - 0.213362I$	$1.05685 - 1.43205I$	0
$u = -0.144534 + 0.811710I$ $a = -2.89684 + 0.94833I$ $b = 1.35719 + 0.57614I$	$5.2555 + 13.9655I$	$0. - 8.79296I$
$u = -0.144534 - 0.811710I$ $a = -2.89684 - 0.94833I$ $b = 1.35719 - 0.57614I$	$5.2555 - 13.9655I$	$0. + 8.79296I$
$u = -1.153830 + 0.313248I$ $a = 1.274740 - 0.020552I$ $b = -1.36053 + 0.68227I$	$2.84442 - 1.43397I$	0
$u = -1.153830 - 0.313248I$ $a = 1.274740 + 0.020552I$ $b = -1.36053 - 0.68227I$	$2.84442 + 1.43397I$	0
$u = -0.134940 + 0.785568I$ $a = 0.90410 + 1.19582I$ $b = 0.052430 - 1.189570I$	$1.14989 + 7.82651I$	$-2.02077 - 8.17490I$
$u = -0.134940 - 0.785568I$ $a = 0.90410 - 1.19582I$ $b = 0.052430 + 1.189570I$	$1.14989 - 7.82651I$	$-2.02077 + 8.17490I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.171330 + 0.286191I$ $a = 3.60617 - 1.73630I$ $b = -1.056690 - 0.074059I$	$0.890609 - 0.882288I$	0
$u = 1.171330 - 0.286191I$ $a = 3.60617 + 1.73630I$ $b = -1.056690 + 0.074059I$	$0.890609 + 0.882288I$	0
$u = -0.107809 + 0.782110I$ $a = 2.98039 - 0.66950I$ $b = -1.34008 - 0.74189I$	$6.00776 + 5.43570I$	$4.84361 - 7.57014I$
$u = -0.107809 - 0.782110I$ $a = 2.98039 + 0.66950I$ $b = -1.34008 + 0.74189I$	$6.00776 - 5.43570I$	$4.84361 + 7.57014I$
$u = -0.081733 + 0.774053I$ $a = 2.92878 - 1.38458I$ $b = -1.57005 + 0.30871I$	$6.79633 + 1.59864I$	$6.88756 - 1.28327I$
$u = -0.081733 - 0.774053I$ $a = 2.92878 + 1.38458I$ $b = -1.57005 - 0.30871I$	$6.79633 - 1.59864I$	$6.88756 + 1.28327I$
$u = 0.138651 + 0.759319I$ $a = -0.351130 - 0.209085I$ $b = 0.119000 + 0.310193I$	$1.63666 - 3.24838I$	$-2.97188 + 2.12306I$
$u = 0.138651 - 0.759319I$ $a = -0.351130 + 0.209085I$ $b = 0.119000 - 0.310193I$	$1.63666 + 3.24838I$	$-2.97188 - 2.12306I$
$u = 0.105697 + 0.761805I$ $a = 3.83553 + 2.76175I$ $b = -1.051740 + 0.109936I$	$4.09016 - 2.94806I$	$-10.1598 - 11.5645I$
$u = 0.105697 - 0.761805I$ $a = 3.83553 - 2.76175I$ $b = -1.051740 - 0.109936I$	$4.09016 + 2.94806I$	$-10.1598 + 11.5645I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.189960 + 0.315903I$ $a = 1.89639 - 0.44180I$ $b = -1.53464 - 0.36870I$	$3.42433 + 2.35782I$	0
$u = -1.189960 - 0.315903I$ $a = 1.89639 + 0.44180I$ $b = -1.53464 + 0.36870I$	$3.42433 - 2.35782I$	0
$u = 1.218850 + 0.280045I$ $a = -0.58237 + 1.41538I$ $b = -0.570636 + 0.091864I$	$-0.11833 - 1.76625I$	0
$u = 1.218850 - 0.280045I$ $a = -0.58237 - 1.41538I$ $b = -0.570636 - 0.091864I$	$-0.11833 + 1.76625I$	0
$u = -0.039221 + 0.746787I$ $a = 0.167152 - 1.170260I$ $b = -0.567779 + 0.817936I$	$3.96566 - 1.29839I$	$2.18497 + 4.02972I$
$u = -0.039221 - 0.746787I$ $a = 0.167152 + 1.170260I$ $b = -0.567779 - 0.817936I$	$3.96566 + 1.29839I$	$2.18497 - 4.02972I$
$u = 0.238724 + 0.696600I$ $a = -1.41097 - 0.43554I$ $b = 0.893342 - 0.279263I$	$1.03956 - 4.10317I$	$-5.12667 + 9.90639I$
$u = 0.238724 - 0.696600I$ $a = -1.41097 + 0.43554I$ $b = 0.893342 + 0.279263I$	$1.03956 + 4.10317I$	$-5.12667 - 9.90639I$
$u = 0.082721 + 0.731305I$ $a = 0.256759 - 1.035700I$ $b = -0.714652 - 0.132439I$	$3.33458 - 1.87793I$	$2.57613 + 6.72386I$
$u = 0.082721 - 0.731305I$ $a = 0.256759 + 1.035700I$ $b = -0.714652 + 0.132439I$	$3.33458 + 1.87793I$	$2.57613 - 6.72386I$



Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.235630 + 0.311765I$ $a = 0.410613 - 0.014767I$ $b = -0.439261 - 0.886111I$	$0.28138 + 5.13012I$	0
$u = -1.235630 - 0.311765I$ $a = 0.410613 + 0.014767I$ $b = -0.439261 + 0.886111I$	$0.28138 - 5.13012I$	0
$u = -0.604637 + 0.377946I$ $a = -1.43689 + 1.33325I$ $b = 1.289030 + 0.537727I$	$1.23076 + 9.78607I$	$-3.55004 - 8.76671I$
$u = -0.604637 - 0.377946I$ $a = -1.43689 - 1.33325I$ $b = 1.289030 - 0.537727I$	$1.23076 - 9.78607I$	$-3.55004 + 8.76671I$
$u = -1.247190 + 0.379009I$ $a = -1.92688 + 0.79547I$ $b = 1.311450 + 0.333163I$	$5.51009 + 8.99383I$	0
$u = -1.247190 - 0.379009I$ $a = -1.92688 - 0.79547I$ $b = 1.311450 - 0.333163I$	$5.51009 - 8.99383I$	0
$u = 1.269870 + 0.379706I$ $a = -1.36939 - 1.14885I$ $b = 1.275090 + 0.263970I$	$5.34644 + 0.27299I$	0
$u = 1.269870 - 0.379706I$ $a = -1.36939 + 1.14885I$ $b = 1.275090 - 0.263970I$	$5.34644 - 0.27299I$	0
$u = 1.32911$ $a = -0.752093$ $b = -1.50687$	-1.93259	0
$u = -0.294200 + 0.595315I$ $a = -1.26888 + 0.93132I$ $b = 1.237090 - 0.501458I$	$2.26017 - 6.27429I$	$-1.37179 + 2.81174I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.294200 - 0.595315I$ $a = -1.26888 - 0.93132I$ $b = 1.237090 + 0.501458I$	$2.26017 + 6.27429I$	$-1.37179 - 2.81174I$
$u = 0.497394 + 0.439590I$ $a = -1.36564 - 0.72878I$ $b = 0.802243 - 0.161085I$	$-0.66419 - 1.68719I$	$-11.39599 + 8.12073I$
$u = 0.497394 - 0.439590I$ $a = -1.36564 + 0.72878I$ $b = 0.802243 + 0.161085I$	$-0.66419 + 1.68719I$	$-11.39599 - 8.12073I$
$u = 1.301770 + 0.309962I$ $a = -1.097610 + 0.496242I$ $b = -0.710921 - 0.827783I$	$-0.22651 - 2.50873I$	0
$u = 1.301770 - 0.309962I$ $a = -1.097610 - 0.496242I$ $b = -0.710921 + 0.827783I$	$-0.22651 + 2.50873I$	0
$u = -1.320810 + 0.229375I$ $a = -0.168377 - 0.148303I$ $b = 0.496393 - 0.597888I$	$-4.96158 + 3.74028I$	0
$u = -1.320810 - 0.229375I$ $a = -0.168377 + 0.148303I$ $b = 0.496393 + 0.597888I$	$-4.96158 - 3.74028I$	0
$u = 1.357340 + 0.036829I$ $a = -0.64481 + 1.79711I$ $b = -1.121420 + 0.753763I$	$-3.40531 - 3.28760I$	0
$u = 1.357340 - 0.036829I$ $a = -0.64481 - 1.79711I$ $b = -1.121420 - 0.753763I$	$-3.40531 + 3.28760I$	0
$u = -0.586602 + 0.257849I$ $a = 0.522102 - 0.255402I$ $b = 0.106387 - 1.029130I$	$-2.46224 + 4.23705I$	$-7.70872 - 7.47519I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.586602 - 0.257849I$ $a = 0.522102 + 0.255402I$ $b = 0.106387 + 1.029130I$	$-2.46224 - 4.23705I$	$-7.70872 + 7.47519I$
$u = -1.323900 + 0.311663I$ $a = -0.497700 + 0.855032I$ $b = -0.766085 + 0.188074I$	$-1.09041 + 5.66082I$	0
$u = -1.323900 - 0.311663I$ $a = -0.497700 - 0.855032I$ $b = -0.766085 - 0.188074I$	$-1.09041 - 5.66082I$	0
$u = 1.320340 + 0.332094I$ $a = 0.84342 + 1.93940I$ $b = -1.60232 - 0.26907I$	$2.39939 - 5.59260I$	0
$u = 1.320340 - 0.332094I$ $a = 0.84342 - 1.93940I$ $b = -1.60232 + 0.26907I$	$2.39939 + 5.59260I$	0
$u = -1.364830 + 0.013621I$ $a = -0.14110 - 2.80359I$ $b = -0.944317 - 0.153085I$	$-4.84420 + 0.57804I$	0
$u = -1.364830 - 0.013621I$ $a = -0.14110 + 2.80359I$ $b = -0.944317 + 0.153085I$	$-4.84420 - 0.57804I$	0
$u = 1.340460 + 0.271297I$ $a = -1.19962 - 1.01951I$ $b = 0.322997 - 0.951799I$	$-5.64992 - 2.03615I$	0
$u = 1.340460 - 0.271297I$ $a = -1.19962 + 1.01951I$ $b = 0.322997 + 0.951799I$	$-5.64992 + 2.03615I$	0
$u = -0.158685 + 0.610936I$ $a = -1.300790 - 0.327447I$ $b = 0.228459 + 0.869260I$	$-0.96137 - 1.25908I$	$-4.98451 + 0.66680I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.158685 - 0.610936I$ $a = -1.300790 + 0.327447I$ $b = 0.228459 - 0.869260I$	$-0.96137 + 1.25908I$	$-4.98451 - 0.66680I$
$u = -1.333430 + 0.326258I$ $a = 2.27280 - 3.29785I$ $b = -1.051820 - 0.133392I$	$-0.43475 + 6.88567I$	0
$u = -1.333430 - 0.326258I$ $a = 2.27280 + 3.29785I$ $b = -1.051820 + 0.133392I$	$-0.43475 - 6.88567I$	0
$u = 1.334910 + 0.336617I$ $a = 1.73924 + 2.18490I$ $b = -1.32785 + 0.78054I$	$1.47378 - 9.47675I$	0
$u = 1.334910 - 0.336617I$ $a = 1.73924 - 2.18490I$ $b = -1.32785 - 0.78054I$	$1.47378 + 9.47675I$	0
$u = 0.621098$ $a = -0.599919$ $b = 0.141868$	$-1.24720$	$-8.65320$
$u = 1.365160 + 0.233330I$ $a = 0.375504 - 0.313013I$ $b = 1.183030 + 0.536242I$	$-2.91793 + 3.29629I$	0
$u = 1.365160 - 0.233330I$ $a = 0.375504 + 0.313013I$ $b = 1.183030 - 0.536242I$	$-2.91793 - 3.29629I$	0
$u = -1.350210 + 0.324204I$ $a = 0.0340088 - 0.0616224I$ $b = 0.161165 - 0.365219I$	$-3.05646 + 7.17585I$	0
$u = -1.350210 - 0.324204I$ $a = 0.0340088 + 0.0616224I$ $b = 0.161165 + 0.365219I$	$-3.05646 - 7.17585I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.349480 + 0.336718I$	$-3.52490 - 11.88240I$	0
$a = 1.50306 + 0.13604I$		
$b = 0.076257 + 1.214800I$		
$u = 1.349480 - 0.336718I$	$-3.52490 + 11.88240I$	0
$a = 1.50306 - 0.13604I$		
$b = 0.076257 - 1.214800I$		
$u = 1.392200 + 0.040896I$	$-8.55437 - 5.02075I$	0
$a = 0.41176 + 1.35567I$		
$b = 0.189123 + 1.116580I$		
$u = 1.392200 - 0.040896I$	$-8.55437 + 5.02075I$	0
$a = 0.41176 - 1.35567I$		
$b = 0.189123 - 1.116580I$		
$u = -1.393450 + 0.083248I$	$-6.65127 + 3.23336I$	0
$a = -0.382891 + 0.981947I$		
$b = 0.847847 + 0.366478I$		
$u = -1.393450 - 0.083248I$	$-6.65127 - 3.23336I$	0
$a = -0.382891 - 0.981947I$		
$b = 0.847847 - 0.366478I$		
$u = -1.371250 + 0.280465I$	$-4.02838 + 7.63331I$	0
$a = -0.453878 + 1.001390I$		
$b = 0.850252 + 0.379510I$		
$u = -1.371250 - 0.280465I$	$-4.02838 - 7.63331I$	0
$a = -0.453878 - 1.001390I$		
$b = 0.850252 - 0.379510I$		
$u = -1.354630 + 0.357246I$	$-0.67161 + 10.08760I$	0
$a = -1.37123 + 1.50720I$		
$b = 1.063730 + 0.305774I$		
$u = -1.354630 - 0.357246I$	$-0.67161 - 10.08760I$	0
$a = -1.37123 - 1.50720I$		
$b = 1.063730 - 0.305774I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.357480 + 0.349121I$ $a = -1.64850 - 2.17322I$ $b = 1.35890 - 0.59148I$	$0.5224 - 18.1526I$	0
$u = 1.357480 - 0.349121I$ $a = -1.64850 + 2.17322I$ $b = 1.35890 + 0.59148I$	$0.5224 + 18.1526I$	0
$u = -1.408100 + 0.014929I$ $a = 0.117428 - 0.268962I$ $b = 0.493413 - 0.253339I$	$-7.53758 + 0.06657I$	0
$u = -1.408100 - 0.014929I$ $a = 0.117428 + 0.268962I$ $b = 0.493413 + 0.253339I$	$-7.53758 - 0.06657I$	0
$u = 1.409240 + 0.065039I$ $a = 0.12694 - 1.58323I$ $b = 1.28505 - 0.59078I$	$-5.09313 - 11.01120I$	0
$u = 1.409240 - 0.065039I$ $a = 0.12694 + 1.58323I$ $b = 1.28505 + 0.59078I$	$-5.09313 + 11.01120I$	0
$u = -0.435976 + 0.239765I$ $a = 0.86661 - 1.89922I$ $b = -1.191680 - 0.582430I$	$2.08857 + 2.52807I$	$-0.32506 - 8.71630I$
$u = -0.435976 - 0.239765I$ $a = 0.86661 + 1.89922I$ $b = -1.191680 + 0.582430I$	$2.08857 - 2.52807I$	$-0.32506 + 8.71630I$
$u = 0.449559 + 0.091341I$ $a = 0.46059 + 4.92050I$ $b = -0.953699 + 0.055151I$	$0.728992 - 0.299030I$	$7.0296 - 19.8342I$
$u = 0.449559 - 0.091341I$ $a = 0.46059 - 4.92050I$ $b = -0.953699 - 0.055151I$	$0.728992 + 0.299030I$	$7.0296 + 19.8342I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.198188 + 0.402789I$		
$a = -0.984161 - 0.454357I$	$-0.424686 - 1.170030I$	$-5.91811 + 4.92395I$
$b = 0.189920 + 0.365207I$		
$u = 0.198188 - 0.402789I$		
$a = -0.984161 + 0.454357I$	$-0.424686 + 1.170030I$	$-5.91811 - 4.92395I$
$b = 0.189920 - 0.365207I$		
$u = -0.229242 + 0.271377I$		
$a = 0.49573 - 1.39916I$	$2.66352 - 0.40407I$	$2.91521 - 3.41969I$
$b = -1.242340 + 0.280456I$		
$u = -0.229242 - 0.271377I$		
$a = 0.49573 + 1.39916I$	$2.66352 + 0.40407I$	$2.91521 + 3.41969I$
$b = -1.242340 - 0.280456I$		

$$\text{II. } I_2^u = \langle b - 1, a, u - 1 \rangle$$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1 \\ 1 \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes = 0



(iv) **u**-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$		
$a = 0$	0	0
$b = 1.00000$		

### III. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$u(u^{104} - 17u^{103} + \dots - 6u + 2)$
$c_2$	$(u + 1)(u^{104} + 2u^{103} + \dots - 17u - 1)$
$c_3$	$(u - 1)(u^{104} + 45u^{102} + \dots - 223u + 19)$
$c_4$	$(u - 1)(u^{104} + 2u^{103} + \dots + 89u + 29)$
$c_5$	$(u - 1)(u^{104} + 2u^{103} + \dots - 17u - 1)$
$c_6, c_7$	$(u - 1)(u^{104} + 2u^{103} + \dots - u + 1)$
$c_8$	$(u - 1)(u^{104} - 13u^{102} + \dots + 325815u + 31313)$
$c_9$	$(u - 1)(u^{104} + 4u^{103} + \dots - u - 1)$
$c_{10}, c_{12}$	$u(u^{104} - 3u^{103} + \dots + 1056u - 288)$
$c_{11}$	$(u + 1)(u^{104} + 2u^{103} + \dots - u + 1)$

#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1$	$y(y^{104} - 9y^{103} + \dots - 80y + 4)$
$c_2, c_5$	$(y - 1)(y^{104} - 66y^{103} + \dots - 21y + 1)$
$c_3$	$(y - 1)(y^{104} + 90y^{103} + \dots - 10893y + 361)$
$c_4$	$(y - 1)(y^{104} + 106y^{103} + \dots + 9595y + 841)$
$c_6, c_7, c_{11}$	$(y - 1)(y^{104} - 86y^{103} + \dots - 5y + 1)$
$c_8$	$(y - 1)(y^{104} - 26y^{103} + \dots - 6.45095 \times 10^{10}y + 9.80504 \times 10^8)$
$c_9$	$(y - 1)(y^{104} - 18y^{103} + \dots - 5y + 1)$
$c_{10}, c_{12}$	$y(y^{104} + 63y^{103} + \dots - 965952y + 82944)$