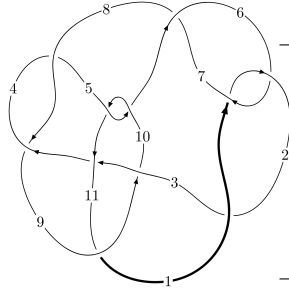
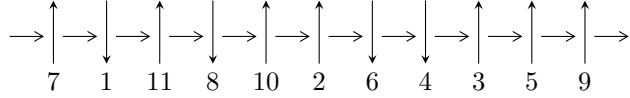


11a<sub>218</sub> (K11a<sub>218</sub>)



A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**

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

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

$$I_1^u = \langle -5.44804 \times 10^{62} u^{78} - 1.03216 \times 10^{63} u^{77} + \dots + 3.63230 \times 10^{62} b + 5.06666 \times 10^{63}, \\ - 4.72952 \times 10^{63} u^{78} - 1.07582 \times 10^{64} u^{77} + \dots + 2.54261 \times 10^{63} a + 7.17584 \times 10^{64}, u^{79} + u^{78} + \dots - 8u - \\ I_2^u = \langle u^{11} + 2u^9 + 4u^7 - u^6 + 5u^5 - u^4 + 3u^3 - u^2 + b + 2u, \\ - 2u^{13} - 2u^{12} - 6u^{11} - 5u^{10} - 14u^9 - 9u^8 - 19u^7 - 11u^6 - 19u^5 - 8u^4 - 13u^3 - 7u^2 + a - 5u - 2, \\ u^{14} + 3u^{12} + 7u^{10} - u^9 + 11u^8 - 2u^7 + 12u^6 - 3u^5 + 10u^4 - 2u^3 + 5u^2 - u + 1 \rangle$$

\* 2 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 93 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.

**I.**

$$I_1^u = \langle -5.45 \times 10^{62} u^{78} - 1.03 \times 10^{63} u^{77} + \dots + 3.63 \times 10^{62} b + 5.07 \times 10^{63}, -4.73 \times 10^{63} u^{78} - 1.08 \times 10^{64} u^{77} + \dots + 2.54 \times 10^{63} a + 7.18 \times 10^{64}, u^{79} + u^{78} + \dots - 8u - 7 \rangle$$

**(i) Arc colorings**

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

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

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

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

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

$$a_3 = \begin{pmatrix} -u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1.86010u^{78} + 4.23115u^{77} + \dots - 46.3492u - 28.2223 \\ 1.49989u^{78} + 2.84161u^{77} + \dots - 33.3985u - 13.9489 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1.17416u^{78} + 2.07095u^{77} + \dots - 29.5282u - 10.3400 \\ 0.206768u^{78} - 0.785482u^{77} + \dots + 9.53356u + 11.2272 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.609104u^{78} + 0.369573u^{77} + \dots + 8.80543u - 8.08874 \\ -1.73226u^{78} - 2.17804u^{77} + \dots + 18.6211u + 2.73894 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1.64175u^{78} + 1.85665u^{77} + \dots - 24.4203u - 9.52711 \\ -0.573692u^{78} - 2.27635u^{77} + \dots + 22.8621u + 20.9732 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.56053u^{78} + 3.29376u^{77} + \dots - 36.4399u - 22.2196 \\ 0.852462u^{78} + 1.64403u^{77} + \dots - 21.4230u - 5.42602 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.56053u^{78} + 3.29376u^{77} + \dots - 36.4399u - 22.2196 \\ 0.852462u^{78} + 1.64403u^{77} + \dots - 21.4230u - 5.42602 \end{pmatrix}$$

**(ii) Obstruction class = -1**

**(iii) Cusp Shapes =  $-2.57564u^{78} - 8.67107u^{77} + \dots + 98.6500u + 77.0521$**

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1, c_6$	$u^{79} + u^{78} + \dots - 8u - 7$
$c_2, c_7$	$u^{79} + 25u^{78} + \dots - 664u - 49$
$c_3$	$u^{79} + 7u^{78} + \dots + 2u - 1$
$c_4, c_8$	$u^{79} - 2u^{78} + \dots + 347u - 71$
$c_5, c_{10}$	$u^{79} - u^{78} + \dots - 14u^2 - 1$
$c_9$	$u^{79} - 5u^{77} + \dots - 249u - 83$
$c_{11}$	$u^{79} + 9u^{78} + \dots - 4205u - 689$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_6$	$y^{79} + 25y^{78} + \dots - 664y - 49$
$c_2, c_7$	$y^{79} + 65y^{78} + \dots + 132784y - 2401$
$c_3$	$y^{79} - 7y^{78} + \dots - 10y - 1$
$c_4, c_8$	$y^{79} + 56y^{78} + \dots - 115737y - 5041$
$c_5, c_{10}$	$y^{79} + 45y^{78} + \dots - 28y - 1$
$c_9$	$y^{79} - 10y^{78} + \dots + 155127y - 6889$
$c_{11}$	$y^{79} - 29y^{78} + \dots + 14498845y - 474721$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.068601 + 0.992204I$	$-3.14903 + 3.12627I$	0
$a = -0.153424 + 1.337650I$		
$b = 0.691328 + 1.177290I$		
$u = 0.068601 - 0.992204I$	$-3.14903 - 3.12627I$	0
$a = -0.153424 - 1.337650I$		
$b = 0.691328 - 1.177290I$		
$u = -0.747557 + 0.710223I$	$3.61173 + 0.72947I$	0
$a = 1.241940 - 0.068757I$		
$b = -0.468963 - 0.268238I$		
$u = -0.747557 - 0.710223I$	$3.61173 - 0.72947I$	0
$a = 1.241940 + 0.068757I$		
$b = -0.468963 + 0.268238I$		
$u = -0.718133 + 0.742230I$	$2.13841 + 2.75328I$	0
$a = 1.30172 + 1.16845I$		
$b = -0.996894 - 0.955293I$		
$u = -0.718133 - 0.742230I$	$2.13841 - 2.75328I$	0
$a = 1.30172 - 1.16845I$		
$b = -0.996894 + 0.955293I$		
$u = -0.385001 + 0.967084I$	$-4.88505 - 1.08505I$	0
$a = 0.856191 + 0.719727I$		
$b = 0.062793 + 1.276180I$		
$u = -0.385001 - 0.967084I$	$-4.88505 + 1.08505I$	0
$a = 0.856191 - 0.719727I$		
$b = 0.062793 - 1.276180I$		
$u = -0.236787 + 1.021880I$	$-5.62568 - 4.91714I$	0
$a = -1.30938 - 1.15749I$		
$b = 0.300280 - 1.213660I$		
$u = -0.236787 - 1.021880I$	$-5.62568 + 4.91714I$	0
$a = -1.30938 + 1.15749I$		
$b = 0.300280 + 1.213660I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.294156 + 0.904371I$ $a = 0.0378805 - 0.1197230I$ $b = -0.979850 + 0.015955I$	$1.42957 - 5.30340I$	$0. + 8.18949I$
$u = -0.294156 - 0.904371I$ $a = 0.0378805 + 0.1197230I$ $b = -0.979850 - 0.015955I$	$1.42957 + 5.30340I$	$0. - 8.18949I$
$u = 0.725101 + 0.823158I$ $a = -0.364980 + 1.165740I$ $b = 0.586179 - 0.930088I$	$0.91115 + 1.68888I$	0
$u = 0.725101 - 0.823158I$ $a = -0.364980 - 1.165740I$ $b = 0.586179 + 0.930088I$	$0.91115 - 1.68888I$	0
$u = 0.588826 + 0.926444I$ $a = 0.999280 + 0.627418I$ $b = 0.259716 - 1.197850I$	$-0.22599 + 2.17222I$	0
$u = 0.588826 - 0.926444I$ $a = 0.999280 - 0.627418I$ $b = 0.259716 + 1.197850I$	$-0.22599 - 2.17222I$	0
$u = -0.710928 + 0.836978I$ $a = 2.18368 - 0.06877I$ $b = -0.286792 + 0.573885I$	$3.19613 + 0.36905I$	0
$u = -0.710928 - 0.836978I$ $a = 2.18368 + 0.06877I$ $b = -0.286792 - 0.573885I$	$3.19613 - 0.36905I$	0
$u = 0.106082 + 0.890241I$ $a = -0.369055 + 0.588099I$ $b = 0.565118 + 0.130913I$	$-1.64796 + 1.63173I$	$-1.15356 - 4.67450I$
$u = 0.106082 - 0.890241I$ $a = -0.369055 - 0.588099I$ $b = 0.565118 - 0.130913I$	$-1.64796 - 1.63173I$	$-1.15356 + 4.67450I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.876569 + 0.066661I$ $a = -0.622530 - 0.556101I$ $b = 0.549607 + 1.031330I$	$2.03962 + 6.66682I$	$6.74963 - 6.99085I$
$u = 0.876569 - 0.066661I$ $a = -0.622530 + 0.556101I$ $b = 0.549607 - 1.031330I$	$2.03962 - 6.66682I$	$6.74963 + 6.99085I$
$u = 0.906807 + 0.666792I$ $a = -0.452346 + 0.331194I$ $b = 0.561743 - 1.084000I$	$6.02916 - 1.41665I$	0
$u = 0.906807 - 0.666792I$ $a = -0.452346 - 0.331194I$ $b = 0.561743 + 1.084000I$	$6.02916 + 1.41665I$	0
$u = -0.725122 + 0.874260I$ $a = -1.30561 + 0.72285I$ $b = -0.05188 - 1.88290I$	$-0.23925 - 2.76678I$	0
$u = -0.725122 - 0.874260I$ $a = -1.30561 - 0.72285I$ $b = -0.05188 + 1.88290I$	$-0.23925 + 2.76678I$	0
$u = 0.847566 + 0.759732I$ $a = 0.916382 - 0.975772I$ $b = -0.469786 + 1.039580I$	$1.50890 - 3.98013I$	0
$u = 0.847566 - 0.759732I$ $a = 0.916382 + 0.975772I$ $b = -0.469786 - 1.039580I$	$1.50890 + 3.98013I$	0
$u = 0.768818 + 0.842684I$ $a = 0.787145 - 0.216058I$ $b = -0.523775 + 1.132210I$	$5.15403 - 0.95027I$	0
$u = 0.768818 - 0.842684I$ $a = 0.787145 + 0.216058I$ $b = -0.523775 - 1.132210I$	$5.15403 + 0.95027I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.486696 + 0.703689I$ $a = 0.519465 + 0.821783I$ $b = 0.093122 - 0.577690I$	$0.36304 + 1.84837I$	$2.66443 - 3.35239I$
$u = 0.486696 - 0.703689I$ $a = 0.519465 - 0.821783I$ $b = 0.093122 + 0.577690I$	$0.36304 - 1.84837I$	$2.66443 + 3.35239I$
$u = 0.843432 + 0.790066I$ $a = -1.72508 + 0.39273I$ $b = 1.287590 + 0.433064I$	$8.57301 - 3.45586I$	0
$u = 0.843432 - 0.790066I$ $a = -1.72508 - 0.39273I$ $b = 1.287590 - 0.433064I$	$8.57301 + 3.45586I$	0
$u = -0.909408 + 0.715797I$ $a = -0.822486 - 0.850087I$ $b = 0.75301 + 1.25876I$	$5.89486 + 10.51700I$	0
$u = -0.909408 - 0.715797I$ $a = -0.822486 + 0.850087I$ $b = 0.75301 - 1.25876I$	$5.89486 - 10.51700I$	0
$u = -0.709662 + 0.915793I$ $a = -1.23890 - 0.75698I$ $b = 0.452617 + 0.379590I$	$2.94594 - 5.81075I$	0
$u = -0.709662 - 0.915793I$ $a = -1.23890 + 0.75698I$ $b = 0.452617 - 0.379590I$	$2.94594 + 5.81075I$	0
$u = 0.724913 + 0.913338I$ $a = 1.94129 + 0.25721I$ $b = -0.615371 - 1.136900I$	$0.63787 + 3.85193I$	0
$u = 0.724913 - 0.913338I$ $a = 1.94129 - 0.25721I$ $b = -0.615371 + 1.136900I$	$0.63787 - 3.85193I$	0



Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.272193 + 1.148200I$ $a = 0.673138 - 1.136890I$ $b = -0.539494 - 1.221250I$	$-2.11575 + 10.45870I$	0
$u = 0.272193 - 1.148200I$ $a = 0.673138 + 1.136890I$ $b = -0.539494 + 1.221250I$	$-2.11575 - 10.45870I$	0
$u = 0.752269 + 0.913216I$ $a = -2.08253 + 0.73148I$ $b = 0.449175 + 1.172200I$	$4.93567 + 6.70197I$	0
$u = 0.752269 - 0.913216I$ $a = -2.08253 - 0.73148I$ $b = 0.449175 - 1.172200I$	$4.93567 - 6.70197I$	0
$u = -0.699416 + 0.965229I$ $a = -2.35631 - 0.61292I$ $b = 1.00524 - 1.09298I$	$1.46348 - 8.20122I$	0
$u = -0.699416 - 0.965229I$ $a = -2.35631 + 0.61292I$ $b = 1.00524 + 1.09298I$	$1.46348 + 8.20122I$	0
$u = -0.088492 + 0.800040I$ $a = 0.66008 - 3.50543I$ $b = 0.198364 - 0.926764I$	$0.06134 - 3.40830I$	$0.00748 + 5.95558I$
$u = -0.088492 - 0.800040I$ $a = 0.66008 + 3.50543I$ $b = 0.198364 + 0.926764I$	$0.06134 + 3.40830I$	$0.00748 - 5.95558I$
$u = -0.072534 + 1.193830I$ $a = -0.178921 + 1.190570I$ $b = -0.263590 + 0.843873I$	$-1.193530 - 0.319368I$	0
$u = -0.072534 - 1.193830I$ $a = -0.178921 - 1.190570I$ $b = -0.263590 - 0.843873I$	$-1.193530 + 0.319368I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.056663 + 0.795280I$ $a = 1.07684 + 1.56691I$ $b = -0.23874 + 1.54232I$	$-3.94909 - 0.33166I$	$-2.88323 - 2.20171I$
$u = -0.056663 - 0.795280I$ $a = 1.07684 - 1.56691I$ $b = -0.23874 - 1.54232I$	$-3.94909 + 0.33166I$	$-2.88323 + 2.20171I$
$u = -0.688272 + 0.999750I$ $a = -1.40266 - 0.69035I$ $b = 0.347900 - 0.472595I$	$2.72299 - 6.21170I$	0
$u = -0.688272 - 0.999750I$ $a = -1.40266 + 0.69035I$ $b = 0.347900 + 0.472595I$	$2.72299 + 6.21170I$	0
$u = 0.778280 + 0.975214I$ $a = 1.04179 - 1.15319I$ $b = -1.356540 + 0.352012I$	$7.99698 + 9.50667I$	0
$u = 0.778280 - 0.975214I$ $a = 1.04179 + 1.15319I$ $b = -1.356540 - 0.352012I$	$7.99698 - 9.50667I$	0
$u = -0.903504 + 0.861547I$ $a = -0.660376 - 0.226832I$ $b = 0.502624 - 0.303555I$	$8.16830 - 3.10045I$	0
$u = -0.903504 - 0.861547I$ $a = -0.660376 + 0.226832I$ $b = 0.502624 + 0.303555I$	$8.16830 + 3.10045I$	0
$u = 0.347261 + 1.209130I$ $a = -0.622118 + 0.380504I$ $b = -0.341064 + 0.969919I$	$-1.76986 - 2.28307I$	0
$u = 0.347261 - 1.209130I$ $a = -0.622118 - 0.380504I$ $b = -0.341064 - 0.969919I$	$-1.76986 + 2.28307I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.768557 + 0.996208I$ $a = -2.12255 - 0.03776I$ $b = 0.508968 + 1.098010I$	$0.77749 + 10.01260I$	0
$u = 0.768557 - 0.996208I$ $a = -2.12255 + 0.03776I$ $b = 0.508968 - 1.098010I$	$0.77749 - 10.01260I$	0
$u = -0.865083 + 0.914831I$ $a = 0.162002 - 0.696670I$ $b = 0.026697 + 0.290718I$	$7.97266 - 3.20478I$	0
$u = -0.865083 - 0.914831I$ $a = 0.162002 + 0.696670I$ $b = 0.026697 - 0.290718I$	$7.97266 + 3.20478I$	0
$u = -0.842928 + 0.946030I$ $a = 0.590128 + 0.065077I$ $b = -0.541177 - 0.008044I$	$7.88914 - 3.32695I$	0
$u = -0.842928 - 0.946030I$ $a = 0.590128 - 0.065077I$ $b = -0.541177 + 0.008044I$	$7.88914 + 3.32695I$	0
$u = -0.668593 + 0.213008I$ $a = -0.641632 - 0.638273I$ $b = 0.657782 - 0.479809I$	$3.63016 + 1.97736I$	$9.76414 - 0.88731I$
$u = -0.668593 - 0.213008I$ $a = -0.641632 + 0.638273I$ $b = 0.657782 + 0.479809I$	$3.63016 - 1.97736I$	$9.76414 + 0.88731I$
$u = -0.776485 + 1.042220I$ $a = 2.05300 + 0.37394I$ $b = -0.74638 + 1.32056I$	$4.8754 - 16.7440I$	0
$u = -0.776485 - 1.042220I$ $a = 2.05300 - 0.37394I$ $b = -0.74638 - 1.32056I$	$4.8754 + 16.7440I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.762838 + 1.065990I$ $a = 1.46928 - 0.52381I$ $b = -0.495147 - 1.185170I$	$4.80363 + 7.58954I$	0
$u = 0.762838 - 1.065990I$ $a = 1.46928 + 0.52381I$ $b = -0.495147 + 1.185170I$	$4.80363 - 7.58954I$	0
$u = 0.482336 + 0.441392I$ $a = 1.20543 + 0.91074I$ $b = -0.492152 - 0.878703I$	$0.81950 + 2.03003I$	$6.05353 - 3.33812I$
$u = 0.482336 - 0.441392I$ $a = 1.20543 - 0.91074I$ $b = -0.492152 + 0.878703I$	$0.81950 - 2.03003I$	$6.05353 + 3.33812I$
$u = -0.596765 + 0.028691I$ $a = 0.787991 - 1.060340I$ $b = -0.142905 + 1.090580I$	$-2.35254 - 2.09310I$	$1.61759 + 3.77424I$
$u = -0.596765 - 0.028691I$ $a = 0.787991 + 1.060340I$ $b = -0.142905 - 1.090580I$	$-2.35254 + 2.09310I$	$1.61759 - 3.77424I$
$u = -0.119202 + 0.475498I$ $a = 2.06498 + 0.81754I$ $b = -0.577638 - 0.808331I$	$0.98268 + 2.41658I$	$3.66259 + 0.85361I$
$u = -0.119202 - 0.475498I$ $a = 2.06498 - 0.81754I$ $b = -0.577638 + 0.808331I$	$0.98268 - 2.41658I$	$3.66259 - 0.85361I$
$u = 0.415093$ $a = 1.43678$ $b = -0.463470$	0.930718	11.0930

**II.**

$$I_2^u = \langle u^{11} + 2u^9 + \dots + b + 2u, -2u^{13} - 2u^{12} + \dots + a - 2, u^{14} + 3u^{12} + \dots - u + 1 \rangle$$

**(i) Arc colorings**

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

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

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

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

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

$$a_3 = \begin{pmatrix} -u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2u^{13} + 2u^{12} + \dots + 5u + 2 \\ -u^{11} - 2u^9 - 4u^7 + u^6 - 5u^5 + u^4 - 3u^3 + u^2 - 2u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -3u^{13} + u^{12} + \dots - 6u + 3 \\ u^{12} + 3u^{10} + 7u^8 - u^7 + 10u^6 - 2u^5 + 10u^4 - 3u^3 + 7u^2 - u + 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2u^{13} + u^{12} + \dots + 4u - 1 \\ -u^{13} - u^{12} + \dots - u - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2u^{13} + u^{12} + \dots - 3u + 2 \\ u^{12} + 3u^{10} + 7u^8 - u^7 + 10u^6 - u^5 + 10u^4 - 2u^3 + 7u^2 + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2u^{13} + u^{12} + \dots + 6u + 1 \\ -u^{11} - 2u^9 - u^8 - 4u^7 - u^6 - 5u^5 - 2u^4 - 3u^3 - 2u^2 - 2u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2u^{13} + u^{12} + \dots + 6u + 1 \\ -u^{11} - 2u^9 - u^8 - 4u^7 - u^6 - 5u^5 - 2u^4 - 3u^3 - 2u^2 - 2u - 1 \end{pmatrix}$$

**(ii) Obstruction class = 1**

**(iii) Cusp Shapes**

$$= -8u^{13} - 3u^{12} - 22u^{11} - 9u^{10} - 53u^9 - 13u^8 - 77u^7 - 16u^6 - 79u^5 - 6u^4 - 61u^3 - 9u^2 - 21u + 3$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{14} + 3u^{12} + \dots + u + 1$
$c_2, c_7$	$u^{14} + 6u^{13} + \dots + 9u + 1$
$c_3$	$u^{14} + 2u^{13} + u^{12} - 2u^{10} - 4u^9 + 2u^8 + u^6 + 3u^5 - 3u^4 - u + 1$
$c_4$	$u^{14} - u^{13} + \dots + 7u^2 + 1$
$c_5$	$u^{14} + 7u^{12} + \dots + u + 1$
$c_6$	$u^{14} + 3u^{12} + \dots - u + 1$
$c_8$	$u^{14} + u^{13} + \dots + 7u^2 + 1$
$c_9$	$u^{14} + u^{13} - 3u^{10} - 3u^9 + u^8 + 2u^6 + 4u^5 - 2u^4 + u^2 - 2u + 1$
$c_{10}$	$u^{14} + 7u^{12} + \dots - u + 1$
$c_{11}$	$u^{14} - 4u^{12} + \dots - 6u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_6$	$y^{14} + 6y^{13} + \dots + 9y + 1$
$c_2, c_7$	$y^{14} + 10y^{13} + \dots + y + 1$
$c_3$	$y^{14} - 2y^{13} + \dots - y + 1$
$c_4, c_8$	$y^{14} + 13y^{13} + \dots + 14y + 1$
$c_5, c_{10}$	$y^{14} + 14y^{13} + \dots + 13y + 1$
$c_9$	$y^{14} - y^{13} + \dots - 2y + 1$
$c_{11}$	$y^{14} - 8y^{13} + \dots - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.726429 + 0.738003I$ $a = 1.353070 - 0.241803I$ $b = -0.584789 + 0.795162I$	$3.27925 - 1.94202I$	$6.99263 + 3.48916I$
$u = 0.726429 - 0.738003I$ $a = 1.353070 + 0.241803I$ $b = -0.584789 - 0.795162I$	$3.27925 + 1.94202I$	$6.99263 - 3.48916I$
$u = -0.653577 + 0.866508I$ $a = 1.42775 - 1.02270I$ $b = 0.04408 + 1.69162I$	$-1.39544 - 2.54104I$	$-3.53419 + 2.88773I$
$u = -0.653577 - 0.866508I$ $a = 1.42775 + 1.02270I$ $b = 0.04408 - 1.69162I$	$-1.39544 + 2.54104I$	$-3.53419 - 2.88773I$
$u = -0.252602 + 0.846708I$ $a = -0.614186 - 1.257430I$ $b = 0.10455 - 1.45717I$	$-3.69976 - 1.12261I$	$2.04246 + 5.85401I$
$u = -0.252602 - 0.846708I$ $a = -0.614186 + 1.257430I$ $b = 0.10455 + 1.45717I$	$-3.69976 + 1.12261I$	$2.04246 - 5.85401I$
$u = 0.164460 + 1.120840I$ $a = 0.734317 - 1.077060I$ $b = 0.258541 - 0.856843I$	$-1.23971 - 1.45474I$	$3.50312 + 2.29074I$
$u = 0.164460 - 1.120840I$ $a = 0.734317 + 1.077060I$ $b = 0.258541 + 0.856843I$	$-1.23971 + 1.45474I$	$3.50312 - 2.29074I$
$u = 0.693530 + 0.982336I$ $a = -1.97340 + 0.86184I$ $b = 0.590972 + 0.911227I$	$2.52164 + 7.39185I$	$5.20313 - 8.53818I$
$u = 0.693530 - 0.982336I$ $a = -1.97340 - 0.86184I$ $b = 0.590972 - 0.911227I$	$2.52164 - 7.39185I$	$5.20313 + 8.53818I$



Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.890932 + 0.918447I$	$7.64720 - 3.27992I$	$-7.30018 + 4.84584I$
$a = 0.306117 - 0.672539I$		
$b = -0.035727 + 0.562759I$		
$u = -0.890932 - 0.918447I$	$7.64720 + 3.27992I$	$-7.30018 - 4.84584I$
$a = 0.306117 + 0.672539I$		
$b = -0.035727 - 0.562759I$		
$u = 0.212692 + 0.537116I$	$1.11150 + 3.22050I$	$7.09303 - 7.62197I$
$a = 0.26634 + 2.51077I$		
$b = -0.377626 - 0.645284I$		
$u = 0.212692 - 0.537116I$	$1.11150 - 3.22050I$	$7.09303 + 7.62197I$
$a = 0.26634 - 2.51077I$		
$b = -0.377626 + 0.645284I$		

### III. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$(u^{14} + 3u^{12} + \dots + u + 1)(u^{79} + u^{78} + \dots - 8u - 7)$
$c_2, c_7$	$(u^{14} + 6u^{13} + \dots + 9u + 1)(u^{79} + 25u^{78} + \dots - 664u - 49)$
$c_3$	$(u^{14} + 2u^{13} + u^{12} - 2u^{10} - 4u^9 + 2u^8 + u^6 + 3u^5 - 3u^4 - u + 1)$ $\cdot (u^{79} + 7u^{78} + \dots + 2u - 1)$
$c_4$	$(u^{14} - u^{13} + \dots + 7u^2 + 1)(u^{79} - 2u^{78} + \dots + 347u - 71)$
$c_5$	$(u^{14} + 7u^{12} + \dots + u + 1)(u^{79} - u^{78} + \dots - 14u^2 - 1)$
$c_6$	$(u^{14} + 3u^{12} + \dots - u + 1)(u^{79} + u^{78} + \dots - 8u - 7)$
$c_8$	$(u^{14} + u^{13} + \dots + 7u^2 + 1)(u^{79} - 2u^{78} + \dots + 347u - 71)$
$c_9$	$(u^{14} + u^{13} - 3u^{10} - 3u^9 + u^8 + 2u^6 + 4u^5 - 2u^4 + u^2 - 2u + 1)$ $\cdot (u^{79} - 5u^{77} + \dots - 249u - 83)$
$c_{10}$	$(u^{14} + 7u^{12} + \dots - u + 1)(u^{79} - u^{78} + \dots - 14u^2 - 1)$
$c_{11}$	$(u^{14} - 4u^{12} + \dots - 6u + 1)(u^{79} + 9u^{78} + \dots - 4205u - 689)$

#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1, c_6$	$(y^{14} + 6y^{13} + \dots + 9y + 1)(y^{79} + 25y^{78} + \dots - 664y - 49)$
$c_2, c_7$	$(y^{14} + 10y^{13} + \dots + y + 1)(y^{79} + 65y^{78} + \dots + 132784y - 2401)$
$c_3$	$(y^{14} - 2y^{13} + \dots - y + 1)(y^{79} - 7y^{78} + \dots - 10y - 1)$
$c_4, c_8$	$(y^{14} + 13y^{13} + \dots + 14y + 1)(y^{79} + 56y^{78} + \dots - 115737y - 5041)$
$c_5, c_{10}$	$(y^{14} + 14y^{13} + \dots + 13y + 1)(y^{79} + 45y^{78} + \dots - 28y - 1)$
$c_9$	$(y^{14} - y^{13} + \dots - 2y + 1)(y^{79} - 10y^{78} + \dots + 155127y - 6889)$
$c_{11}$	$(y^{14} - 8y^{13} + \dots - 4y + 1)(y^{79} - 29y^{78} + \dots + 1.44988 \times 10^7 y - 474721)$