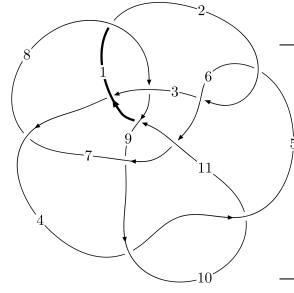
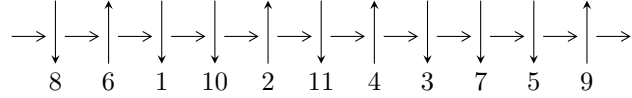


11a<sub>284</sub> (K11a<sub>284</sub>)



A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**

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

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

$$I_1^u = \langle 8.01393 \times 10^{364} u^{114} - 1.89641 \times 10^{365} u^{113} + \dots + 4.40356 \times 10^{365} b + 5.35492 \times 10^{365}, \\ 1.14023 \times 10^{366} u^{114} - 2.02274 \times 10^{366} u^{113} + \dots + 4.40356 \times 10^{365} a + 1.61754 \times 10^{366}, \\ 2u^{115} - 3u^{114} + \dots + 3u + 1 \rangle$$

$$I_2^u = \langle -43367178772u^{25} - 89820581776u^{24} + \dots + 434125229b - 45968805245, \\ 342690500382u^{25} + 664891502229u^{24} + \dots + 434125229a + 318033048822, \\ 2u^{26} + 5u^{25} + \dots + 2u + 1 \rangle$$

\* 2 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 141 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.

$$\mathbf{I. } I_1^u = \langle 8.01 \times 10^{364} u^{114} - 1.90 \times 10^{365} u^{113} + \dots + 4.40 \times 10^{365} b + 5.35 \times 10^{365}, 1.14 \times 10^{366} u^{114} - 2.02 \times 10^{366} u^{113} + \dots + 4.40 \times 10^{365} a + 1.62 \times 10^{366}, 2u^{115} - 3u^{114} + \dots + 3u + 1 \rangle$$

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -2.58933u^{114} + 4.59342u^{113} + \dots + 5.12660u - 3.67325 \\ -0.181987u^{114} + 0.430653u^{113} + \dots + 0.643336u - 1.21604 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -2.40734u^{114} + 4.16276u^{113} + \dots + 4.48327u - 2.45721 \\ -0.181987u^{114} + 0.430653u^{113} + \dots + 0.643336u - 1.21604 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.91206u^{114} - 1.72299u^{113} + \dots - 9.03111u + 4.62584 \\ 0.201241u^{114} - 0.542418u^{113} + \dots - 1.10941u + 1.75199 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2.44462u^{114} + 4.40973u^{113} + \dots + 4.60015u - 4.22398 \\ 0.0838673u^{114} + 0.135176u^{113} + \dots + 0.567897u - 1.51108 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.41907u^{114} + 1.72105u^{113} + \dots + 0.421963u + 0.961382 \\ -0.913213u^{114} + 1.18685u^{113} + \dots - 2.35761u - 1.04960 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -3.24528u^{114} + 5.68590u^{113} + \dots - 4.48017u + 0.758121 \\ -0.980130u^{114} + 1.88688u^{113} + \dots - 7.48383u - 0.0115047 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.45747u^{114} + 1.79427u^{113} + \dots + 0.811536u + 0.994149 \\ -0.952007u^{114} + 1.26219u^{113} + \dots - 1.96378u - 1.00902 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -1.45747u^{114} + 1.79427u^{113} + \dots + 0.811536u + 0.994149 \\ -0.952007u^{114} + 1.26219u^{113} + \dots - 1.96378u - 1.00902 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $-6.75068u^{114} + 11.5616u^{113} + \dots + 31.7925u - 17.7512$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$2(2u^{115} + 9u^{114} + \dots + 2406u - 767)$
$c_2, c_5$	$2(2u^{115} + 3u^{114} + \dots + 3u - 1)$
$c_3$	$u^{115} - 9u^{114} + \dots - 4u + 1$
$c_4, c_{10}$	$u^{115} - 2u^{114} + \dots - 3876u - 1201$
$c_6$	$u^{115} - 13u^{113} + \dots + 85279u - 38788$
$c_7$	$u^{115} - 4u^{114} + \dots + 11570253u + 823526$
$c_8$	$2(2u^{115} - u^{114} + \dots + 114u - 7)$
$c_9$	$4(4u^{115} + 57u^{114} + \dots + 15305u + 10639)$
$c_{11}$	$u^{115} + 9u^{114} + \dots - 183323u - 19982$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$4(4y^{115} - 105y^{114} + \dots + 3.50821 \times 10^7 y - 588289)$
$c_2, c_5$	$4(4y^{115} - 237y^{114} + \dots + 27y - 1)$
$c_3$	$y^{115} - 11y^{114} + \dots + 180y - 1$
$c_4, c_{10}$	$y^{115} - 76y^{114} + \dots + 36617356y - 1442401$
$c_6$	$y^{115} - 26y^{114} + \dots + 89633162793y - 1504508944$
$c_7$	$y^{115} + 54y^{114} + \dots - 20235629660847y - 678195072676$
$c_8$	$4(4y^{115} - 61y^{114} + \dots + 886y - 49)$
$c_9$	$16(16y^{115} - 537y^{114} + \dots + 2.20403 \times 10^9 y - 1.13188 \times 10^8)$
$c_{11}$	$y^{115} + 23y^{114} + \dots - 4932760351y - 399280324$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.277056 + 0.964479I$	$-2.71019 - 7.23222I$	0
$a = 0.706133 - 0.696038I$		
$b = -0.012508 - 0.954942I$		
$u = 0.277056 - 0.964479I$	$-2.71019 + 7.23222I$	0
$a = 0.706133 + 0.696038I$		
$b = -0.012508 + 0.954942I$		
$u = -0.908890 + 0.404160I$	$-0.68914 - 3.66478I$	0
$a = -0.531374 + 0.507711I$		
$b = 0.234098 - 1.101470I$		
$u = -0.908890 - 0.404160I$	$-0.68914 + 3.66478I$	0
$a = -0.531374 - 0.507711I$		
$b = 0.234098 + 1.101470I$		
$u = 0.942155 + 0.291334I$	$-0.79505 + 2.96219I$	0
$a = 0.165857 - 0.990733I$		
$b = 0.367774 + 0.043771I$		
$u = 0.942155 - 0.291334I$	$-0.79505 - 2.96219I$	0
$a = 0.165857 + 0.990733I$		
$b = 0.367774 - 0.043771I$		
$u = 0.942618 + 0.396862I$	$0.84959 + 4.92469I$	0
$a = -0.735978 - 1.143230I$		
$b = -0.225514 + 0.606525I$		
$u = 0.942618 - 0.396862I$	$0.84959 - 4.92469I$	0
$a = -0.735978 + 1.143230I$		
$b = -0.225514 - 0.606525I$		
$u = 0.891020 + 0.378810I$	$3.53196 + 1.57888I$	0
$a = -1.198140 + 0.077601I$		
$b = 0.18102 + 1.75461I$		
$u = 0.891020 - 0.378810I$	$3.53196 - 1.57888I$	0
$a = -1.198140 - 0.077601I$		
$b = 0.18102 - 1.75461I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.026164 + 1.033040I$	$-2.97182 - 2.03893I$	0
$a = 0.790749 + 0.473570I$		
$b = 0.078049 + 0.552303I$		
$u = 0.026164 - 1.033040I$	$-2.97182 + 2.03893I$	0
$a = 0.790749 - 0.473570I$		
$b = 0.078049 - 0.552303I$		
$u = -0.076207 + 1.035040I$	$-6.14019 - 0.62684I$	0
$a = -1.56149 - 0.68640I$		
$b = -1.106940 - 0.106044I$		
$u = -0.076207 - 1.035040I$	$-6.14019 + 0.62684I$	0
$a = -1.56149 + 0.68640I$		
$b = -1.106940 + 0.106044I$		
$u = 0.994808 + 0.352312I$	$-4.35240 - 0.58562I$	0
$a = 2.25386 + 0.31135I$		
$b = 1.43105 + 0.02510I$		
$u = 0.994808 - 0.352312I$	$-4.35240 + 0.58562I$	0
$a = 2.25386 - 0.31135I$		
$b = 1.43105 - 0.02510I$		
$u = -0.970256 + 0.418610I$	$1.62964 - 5.18438I$	0
$a = -0.105755 + 0.727504I$		
$b = 0.582607 - 0.698925I$		
$u = -0.970256 - 0.418610I$	$1.62964 + 5.18438I$	0
$a = -0.105755 - 0.727504I$		
$b = 0.582607 + 0.698925I$		
$u = 1.045430 + 0.257801I$	$0.06859 - 2.68945I$	0
$a = 0.215650 + 0.460106I$		
$b = 0.954355 + 0.617889I$		
$u = 1.045430 - 0.257801I$	$0.06859 + 2.68945I$	0
$a = 0.215650 - 0.460106I$		
$b = 0.954355 - 0.617889I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.025960 + 0.334961I$ $a = 0.520385 - 0.208896I$ $b = -0.443788 + 0.795349I$	$1.83286 - 0.68624I$	0
$u = -1.025960 - 0.334961I$ $a = 0.520385 + 0.208896I$ $b = -0.443788 - 0.795349I$	$1.83286 + 0.68624I$	0
$u = 0.319245 + 0.857302I$ $a = -1.28065 - 0.87510I$ $b = -1.232710 - 0.278290I$	$-6.29691 - 0.61776I$	0
$u = 0.319245 - 0.857302I$ $a = -1.28065 + 0.87510I$ $b = -1.232710 + 0.278290I$	$-6.29691 + 0.61776I$	0
$u = -0.837208 + 0.344102I$ $a = -0.211714 + 0.160387I$ $b = 0.286543 - 1.076000I$	$-1.021760 + 0.432243I$	0
$u = -0.837208 - 0.344102I$ $a = -0.211714 - 0.160387I$ $b = 0.286543 + 1.076000I$	$-1.021760 - 0.432243I$	0
$u = -0.980180 + 0.512170I$ $a = 1.181770 - 0.585912I$ $b = 1.63914 - 0.48297I$	$-5.24071 - 6.02921I$	0
$u = -0.980180 - 0.512170I$ $a = 1.181770 + 0.585912I$ $b = 1.63914 + 0.48297I$	$-5.24071 + 6.02921I$	0
$u = -1.029940 + 0.440301I$ $a = 2.94694 - 0.59942I$ $b = 1.273150 + 0.109754I$	$-3.69644 - 8.07570I$	0
$u = -1.029940 - 0.440301I$ $a = 2.94694 + 0.59942I$ $b = 1.273150 - 0.109754I$	$-3.69644 + 8.07570I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.432423 + 0.738791I$ $a = 1.48403 + 0.15123I$ $b = 0.985307 + 0.117780I$	$-1.77940 - 0.62020I$	0
$u = 0.432423 - 0.738791I$ $a = 1.48403 - 0.15123I$ $b = 0.985307 - 0.117780I$	$-1.77940 + 0.62020I$	0
$u = 1.139270 + 0.116928I$ $a = -0.663392 - 0.622278I$ $b = -0.519165 + 0.876104I$	$5.59609 + 3.00304I$	0
$u = 1.139270 - 0.116928I$ $a = -0.663392 + 0.622278I$ $b = -0.519165 - 0.876104I$	$5.59609 - 3.00304I$	0
$u = -1.026960 + 0.509938I$ $a = 0.0084466 + 0.0751284I$ $b = -0.319706 + 0.582678I$	$1.61019 - 1.66229I$	0
$u = -1.026960 - 0.509938I$ $a = 0.0084466 - 0.0751284I$ $b = -0.319706 - 0.582678I$	$1.61019 + 1.66229I$	0
$u = -0.952977 + 0.652216I$ $a = 1.265820 - 0.119057I$ $b = 0.530189 + 0.955205I$	$1.66491 - 3.01542I$	0
$u = -0.952977 - 0.652216I$ $a = 1.265820 + 0.119057I$ $b = 0.530189 - 0.955205I$	$1.66491 + 3.01542I$	0
$u = 0.901119 + 0.728319I$ $a = -1.78543 - 0.98734I$ $b = -0.959244 + 0.232094I$	$0.02959 + 5.02048I$	0
$u = 0.901119 - 0.728319I$ $a = -1.78543 + 0.98734I$ $b = -0.959244 - 0.232094I$	$0.02959 - 5.02048I$	0



Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.996500 + 0.598952I$		
$a = 1.90335 + 0.84290I$	$0.539034 + 0.195029I$	0
$b = 1.026090 - 0.139218I$		
$u = 0.996500 - 0.598952I$		
$a = 1.90335 - 0.84290I$	$0.539034 - 0.195029I$	0
$b = 1.026090 + 0.139218I$		
$u = 1.009810 + 0.586510I$		
$a = 1.44668 + 0.17928I$	$-4.55954 - 1.63755I$	0
$b = 1.45521 + 0.41254I$		
$u = 1.009810 - 0.586510I$		
$a = 1.44668 - 0.17928I$	$-4.55954 + 1.63755I$	0
$b = 1.45521 - 0.41254I$		
$u = -0.657321 + 0.497457I$		
$a = -1.36096 + 2.29044I$	$-6.27820 + 1.86688I$	0
$b = -1.31460 - 0.61425I$		
$u = -0.657321 - 0.497457I$		
$a = -1.36096 - 2.29044I$	$-6.27820 - 1.86688I$	0
$b = -1.31460 + 0.61425I$		
$u = 0.617586 + 0.530780I$		
$a = -1.20097 - 2.56010I$	$-5.80540 + 6.12206I$	0
$b = -1.172710 + 0.567648I$		
$u = 0.617586 - 0.530780I$		
$a = -1.20097 + 2.56010I$	$-5.80540 - 6.12206I$	0
$b = -1.172710 - 0.567648I$		
$u = -1.066550 + 0.540453I$		
$a = 1.52291 - 1.24350I$	$-1.61279 - 9.53611I$	0
$b = 1.53256 + 0.61309I$		
$u = -1.066550 - 0.540453I$		
$a = 1.52291 + 1.24350I$	$-1.61279 + 9.53611I$	0
$b = 1.53256 - 0.61309I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.074800 + 0.576384I$ $a = -1.29525 - 1.11381I$ $b = -1.024400 + 0.478941I$	$0.12708 + 5.59619I$	0
$u = 1.074800 - 0.576384I$ $a = -1.29525 + 1.11381I$ $b = -1.024400 - 0.478941I$	$0.12708 - 5.59619I$	0
$u = -1.115780 + 0.517441I$ $a = 1.12411 - 1.57039I$ $b = 1.38682 + 0.39595I$	$-4.21702 - 8.99203I$	0
$u = -1.115780 - 0.517441I$ $a = 1.12411 + 1.57039I$ $b = 1.38682 - 0.39595I$	$-4.21702 + 8.99203I$	0
$u = 0.686559 + 0.311613I$ $a = -0.94871 - 4.29143I$ $b = -1.122020 - 0.035704I$	$-5.49191 + 3.64527I$	$-9.06683 - 6.94235I$
$u = 0.686559 - 0.311613I$ $a = -0.94871 + 4.29143I$ $b = -1.122020 + 0.035704I$	$-5.49191 - 3.64527I$	$-9.06683 + 6.94235I$
$u = 1.089430 + 0.608012I$ $a = 1.26838 + 0.82385I$ $b = 1.32127 - 0.65726I$	$-4.19786 + 5.91313I$	0
$u = 1.089430 - 0.608012I$ $a = 1.26838 - 0.82385I$ $b = 1.32127 + 0.65726I$	$-4.19786 - 5.91313I$	0
$u = -1.129690 + 0.536597I$ $a = 1.14701 - 1.73795I$ $b = 1.146100 + 0.150850I$	$-3.21433 - 4.24659I$	0
$u = -1.129690 - 0.536597I$ $a = 1.14701 + 1.73795I$ $b = 1.146100 - 0.150850I$	$-3.21433 + 4.24659I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.144960 + 0.514723I$ $a = 0.41311 + 1.62293I$ $b = 1.010130 - 0.380651I$	$0.30874 + 9.37379I$	0
$u = 1.144960 - 0.514723I$ $a = 0.41311 - 1.62293I$ $b = 1.010130 + 0.380651I$	$0.30874 - 9.37379I$	0
$u = 1.127540 + 0.552120I$ $a = 0.98442 + 1.17879I$ $b = 1.30808 - 0.59816I$	$-4.13667 + 9.74502I$	0
$u = 1.127540 - 0.552120I$ $a = 0.98442 - 1.17879I$ $b = 1.30808 + 0.59816I$	$-4.13667 - 9.74502I$	0
$u = -0.652758 + 0.344605I$ $a = -1.94268 + 4.67592I$ $b = -1.034360 + 0.088071I$	$-5.06782 + 4.62329I$	$-8.69727 + 0.I$
$u = -0.652758 - 0.344605I$ $a = -1.94268 - 4.67592I$ $b = -1.034360 - 0.088071I$	$-5.06782 - 4.62329I$	$-8.69727 + 0.I$
$u = -1.226310 + 0.314487I$ $a = -0.267412 + 0.022660I$ $b = 0.780035 - 0.054648I$	$1.53749 + 0.92367I$	0
$u = -1.226310 - 0.314487I$ $a = -0.267412 - 0.022660I$ $b = 0.780035 + 0.054648I$	$1.53749 - 0.92367I$	0
$u = -0.656244 + 0.319907I$ $a = 0.526772 + 0.664365I$ $b = -0.134878 - 0.614359I$	$0.63327 + 1.84453I$	$0. - 4.92506I$
$u = -0.656244 - 0.319907I$ $a = 0.526772 - 0.664365I$ $b = -0.134878 + 0.614359I$	$0.63327 - 1.84453I$	$0. + 4.92506I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.487352 + 1.187960I$ $a = 1.59853 - 0.36682I$ $b = 1.324590 - 0.489779I$	$-6.8504 + 12.4320I$	0
$u = -0.487352 - 1.187960I$ $a = 1.59853 + 0.36682I$ $b = 1.324590 + 0.489779I$	$-6.8504 - 12.4320I$	0
$u = -1.281650 + 0.133666I$ $a = -0.293050 + 0.507280I$ $b = -0.982358 - 0.491043I$	$4.07307 - 1.94826I$	0
$u = -1.281650 - 0.133666I$ $a = -0.293050 - 0.507280I$ $b = -0.982358 + 0.491043I$	$4.07307 + 1.94826I$	0
$u = 0.082739 + 0.705349I$ $a = -0.647035 + 0.485897I$ $b = -1.111110 - 0.194979I$	$-2.52539 - 4.84612I$	$-5.51959 + 6.84426I$
$u = 0.082739 - 0.705349I$ $a = -0.647035 - 0.485897I$ $b = -1.111110 + 0.194979I$	$-2.52539 + 4.84612I$	$-5.51959 - 6.84426I$
$u = -0.426759 + 0.541501I$ $a = -1.86488 + 1.32381I$ $b = -1.44936 + 0.36569I$	$-3.47686 + 5.05598I$	$-4.55066 - 7.76927I$
$u = -0.426759 - 0.541501I$ $a = -1.86488 - 1.32381I$ $b = -1.44936 - 0.36569I$	$-3.47686 - 5.05598I$	$-4.55066 + 7.76927I$
$u = 0.627214 + 0.284968I$ $a = 1.117560 - 0.278719I$ $b = 0.345587 - 0.027787I$	$-1.369570 - 0.113618I$	$-10.02289 - 1.25200I$
$u = 0.627214 - 0.284968I$ $a = 1.117560 + 0.278719I$ $b = 0.345587 + 0.027787I$	$-1.369570 + 0.113618I$	$-10.02289 + 1.25200I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.187654 + 0.641912I$ $a = -1.33995 - 0.46273I$ $b = -1.362680 - 0.322519I$	$-6.65120 - 5.03845I$	$-13.3143 + 5.2572I$
$u = 0.187654 - 0.641912I$ $a = -1.33995 + 0.46273I$ $b = -1.362680 + 0.322519I$	$-6.65120 + 5.03845I$	$-13.3143 - 5.2572I$
$u = 1.188210 + 0.612878I$ $a = 0.566014 - 0.106486I$ $b = -0.004590 - 1.259350I$	$0.03533 + 12.87640I$	0
$u = 1.188210 - 0.612878I$ $a = 0.566014 + 0.106486I$ $b = -0.004590 + 1.259350I$	$0.03533 - 12.87640I$	0
$u = -0.500222 + 0.416805I$ $a = 0.692054 + 0.382242I$ $b = -0.011643 + 0.668932I$	$1.05915 - 1.57001I$	$1.42915 + 4.50979I$
$u = -0.500222 - 0.416805I$ $a = 0.692054 - 0.382242I$ $b = -0.011643 - 0.668932I$	$1.05915 + 1.57001I$	$1.42915 - 4.50979I$
$u = 1.235600 + 0.580995I$ $a = -0.419143 + 0.131296I$ $b = -0.133252 - 0.192188I$	$0.60271 + 7.63366I$	0
$u = 1.235600 - 0.580995I$ $a = -0.419143 - 0.131296I$ $b = -0.133252 + 0.192188I$	$0.60271 - 7.63366I$	0
$u = -1.42233 + 0.06593I$ $a = -0.629358 + 0.145610I$ $b = -0.510605 - 0.872391I$	$3.47321 + 3.16840I$	0
$u = -1.42233 - 0.06593I$ $a = -0.629358 - 0.145610I$ $b = -0.510605 + 0.872391I$	$3.47321 - 3.16840I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.24469 + 0.71962I$ $a = 0.441894 + 0.335592I$ $b = -0.062709 + 1.257770I$	$0.87832 - 4.34613I$	0
$u = -1.24469 - 0.71962I$ $a = 0.441894 - 0.335592I$ $b = -0.062709 - 1.257770I$	$0.87832 + 4.34613I$	0
$u = -1.23597 + 0.74398I$ $a = -1.53824 + 1.00481I$ $b = -1.40743 - 0.58100I$	$-4.4085 - 19.2643I$	0
$u = -1.23597 - 0.74398I$ $a = -1.53824 - 1.00481I$ $b = -1.40743 + 0.58100I$	$-4.4085 + 19.2643I$	0
$u = 1.23577 + 0.83026I$ $a = -1.67688 - 0.91218I$ $b = -1.39446 + 0.56738I$	$-3.46118 + 10.67000I$	0
$u = 1.23577 - 0.83026I$ $a = -1.67688 + 0.91218I$ $b = -1.39446 - 0.56738I$	$-3.46118 - 10.67000I$	0
$u = -1.36252 + 0.61428I$ $a = 0.687546 - 0.708602I$ $b = 1.035290 - 0.037346I$	$-2.68146 + 0.59329I$	0
$u = -1.36252 - 0.61428I$ $a = 0.687546 + 0.708602I$ $b = 1.035290 + 0.037346I$	$-2.68146 - 0.59329I$	0
$u = -0.005305 + 0.476611I$ $a = -2.02527 - 0.46727I$ $b = -1.42361 + 0.20245I$	$-6.76597 + 4.72878I$	$-14.6888 - 8.1121I$
$u = -0.005305 - 0.476611I$ $a = -2.02527 + 0.46727I$ $b = -1.42361 - 0.20245I$	$-6.76597 - 4.72878I$	$-14.6888 + 8.1121I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.22319 + 0.92378I$ $a = -1.35375 + 0.60521I$ $b = -1.163110 - 0.215218I$	$-2.40903 - 9.64189I$	0
$u = -1.22319 - 0.92378I$ $a = -1.35375 - 0.60521I$ $b = -1.163110 + 0.215218I$	$-2.40903 + 9.64189I$	0
$u = 1.54481 + 0.22798I$ $a = -0.651960 - 0.224874I$ $b = -0.973927 + 0.511293I$	$1.97163 + 8.25765I$	0
$u = 1.54481 - 0.22798I$ $a = -0.651960 + 0.224874I$ $b = -0.973927 - 0.511293I$	$1.97163 - 8.25765I$	0
$u = 0.350231 + 0.117341I$ $a = -3.24395 - 2.60965I$ $b = -1.273060 + 0.287079I$	$-2.97685 + 5.07858I$	$-2.94848 - 5.55455I$
$u = 0.350231 - 0.117341I$ $a = -3.24395 + 2.60965I$ $b = -1.273060 - 0.287079I$	$-2.97685 - 5.07858I$	$-2.94848 + 5.55455I$
$u = 0.76967 + 1.46166I$ $a = 1.61644 + 0.51632I$ $b = 1.30419 + 0.62684I$	$-5.39735 - 2.89988I$	0
$u = 0.76967 - 1.46166I$ $a = 1.61644 - 0.51632I$ $b = 1.30419 - 0.62684I$	$-5.39735 + 2.89988I$	0
$u = 0.103712 + 0.325016I$ $a = 1.048460 + 0.308863I$ $b = 0.411316 + 0.582022I$	$-0.82600 - 1.86825I$	$-3.74526 + 4.03129I$
$u = 0.103712 - 0.325016I$ $a = 1.048460 - 0.308863I$ $b = 0.411316 - 0.582022I$	$-0.82600 + 1.86825I$	$-3.74526 - 4.03129I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.320685$ $a = -5.71656$ $b = -1.31890$	-6.33944	-15.0270
$u = -0.171180 + 0.162099I$ $a = -3.35775 - 0.25779I$ $b = -1.44383 + 0.21091I$	$-6.77311 + 4.75588I$	$-19.9085 - 9.7356I$
$u = -0.171180 - 0.162099I$ $a = -3.35775 + 0.25779I$ $b = -1.44383 - 0.21091I$	$-6.77311 - 4.75588I$	$-19.9085 + 9.7356I$
$u = 1.60063 + 0.75570I$ $a = 0.844548 + 0.288371I$ $b = 1.059200 - 0.052066I$	$-3.06735 - 0.13431I$	0
$u = 1.60063 - 0.75570I$ $a = 0.844548 - 0.288371I$ $b = 1.059200 + 0.052066I$	$-3.06735 + 0.13431I$	0



**II.**

$$I_2^u = \langle -4.34 \times 10^{10} u^{25} - 8.98 \times 10^{10} u^{24} + \dots + 4.34 \times 10^8 b - 4.60 \times 10^{10}, 3.43 \times 10^{11} u^{25} + 6.65 \times 10^{11} u^{24} + \dots + 4.34 \times 10^8 a + 3.18 \times 10^{11}, 2u^{26} + 5u^{25} + \dots + 2u + 1 \rangle$$

**(i) Arc colorings**

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

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -789.382u^{25} - 1531.57u^{24} + \dots - 166.336u - 732.584 \\ 99.8956u^{25} + 206.900u^{24} + \dots - 12.0546u + 105.888 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -889.277u^{25} - 1738.47u^{24} + \dots - 154.281u - 838.472 \\ 99.8956u^{25} + 206.900u^{24} + \dots - 12.0546u + 105.888 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -1089.88u^{25} - 2170.25u^{24} + \dots - 83.3611u - 1072.30 \\ -184.845u^{25} - 361.195u^{24} + \dots - 24.6461u - 185.378 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 839.937u^{25} + 1634.70u^{24} + \dots + 151.208u + 805.888 \\ -86.3655u^{25} - 168.823u^{24} + \dots - 24.4333u - 70.7374 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 294.041u^{25} + 583.709u^{24} + \dots + 37.1847u + 276.790 \\ 96.0246u^{25} + 182.005u^{24} + \dots + 56.2578u + 71.6843 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -556.213u^{25} - 1098.55u^{24} + \dots - 40.4201u - 554.483 \\ -57.3599u^{25} - 120.352u^{24} + \dots + 20.0025u - 66.6879 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 316.114u^{25} + 626.661u^{24} + \dots + 32.0322u + 303.826 \\ 115.563u^{25} + 221.890u^{24} + \dots + 49.9128u + 92.6057 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 316.114u^{25} + 626.661u^{24} + \dots + 32.0322u + 303.826 \\ 115.563u^{25} + 221.890u^{24} + \dots + 49.9128u + 92.6057 \end{pmatrix}$$

**(ii) Obstruction class = 1**

**(iii) Cusp Shapes =**  $\frac{420140152888}{434125229}u^{25} + \frac{17210401346}{9236707}u^{24} + \dots + \frac{91899682153}{434125229}u + \frac{357966565160}{434125229}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$2(2u^{26} - 3u^{25} + \dots + 5u + 1)$
$c_2$	$2(2u^{26} - 5u^{25} + \dots - 2u + 1)$
$c_3$	$u^{26} + 2u^{25} + \dots - 5u - 1$
$c_4$	$u^{26} + 3u^{25} + \dots - 5u - 1$
$c_5$	$2(2u^{26} + 5u^{25} + \dots + 2u + 1)$
$c_6$	$u^{26} + u^{25} + \dots + 57u + 28$
$c_7$	$u^{26} - u^{25} + \dots + 21u + 2$
$c_8$	$2(2u^{26} + u^{25} + \dots - 7u - 1)$
$c_9$	$4(4u^{26} + 61u^{25} + \dots + 12u + 1)$
$c_{10}$	$u^{26} - 3u^{25} + \dots + 5u - 1$
$c_{11}$	$u^{26} - 4u^{25} + \dots - 17u - 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$4(4y^{26} - 69y^{25} + \dots - 7y + 1)$
$c_2, c_5$	$4(4y^{26} - 73y^{25} + \dots - 30y + 1)$
$c_3$	$y^{26} + 2y^{25} + \dots - 3y + 1$
$c_4, c_{10}$	$y^{26} - 15y^{25} + \dots + y + 1$
$c_6$	$y^{26} - 9y^{25} + \dots - 9857y + 784$
$c_7$	$y^{26} + 15y^{25} + \dots - 53y + 4$
$c_8$	$4(4y^{26} - 41y^{25} + \dots - 17y + 1)$
$c_9$	$16(16y^{26} - 553y^{25} + \dots - 32y + 1)$
$c_{11}$	$y^{26} - 4y^{25} + \dots - 429y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.902413 + 0.348607I$ $a = 1.203380 + 0.011175I$ $b = -0.11363 + 1.63639I$	$3.68864 - 1.45554I$	$15.4501 - 9.8201I$
$u = -0.902413 - 0.348607I$ $a = 1.203380 - 0.011175I$ $b = -0.11363 - 1.63639I$	$3.68864 + 1.45554I$	$15.4501 + 9.8201I$
$u = 0.833318 + 0.441423I$ $a = -0.815159 - 1.009730I$ $b = 0.144725 + 0.492800I$	$1.07549 + 4.08283I$	$0.16567 - 2.93988I$
$u = 0.833318 - 0.441423I$ $a = -0.815159 + 1.009730I$ $b = 0.144725 - 0.492800I$	$1.07549 - 4.08283I$	$0.16567 + 2.93988I$
$u = -1.07468$ $a = -2.14679$ $b = -1.47023$	$-4.89292$	$-14.4610$
$u = 0.976675 + 0.535227I$ $a = -1.97969 - 0.62996I$ $b = -1.356160 + 0.095896I$	$-3.05153 + 7.14647I$	$-5.02875 - 6.53250I$
$u = 0.976675 - 0.535227I$ $a = -1.97969 + 0.62996I$ $b = -1.356160 - 0.095896I$	$-3.05153 - 7.14647I$	$-5.02875 + 6.53250I$
$u = 0.860993 + 0.166525I$ $a = 0.495992 - 0.119900I$ $b = 0.227577 + 0.672977I$	$-0.421435 - 1.186280I$	$-4.72479 + 2.80501I$
$u = 0.860993 - 0.166525I$ $a = 0.495992 + 0.119900I$ $b = 0.227577 - 0.672977I$	$-0.421435 + 1.186280I$	$-4.72479 - 2.80501I$
$u = 1.096990 + 0.334411I$ $a = 0.690701 + 0.359287I$ $b = -0.206182 - 0.192031I$	$2.42427 - 0.67930I$	$4.38910 + 2.66937I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.096990 - 0.334411I$ $a = 0.690701 - 0.359287I$ $b = -0.206182 + 0.192031I$	$2.42427 + 0.67930I$	$4.38910 - 2.66937I$
$u = 1.079770 + 0.566501I$ $a = -0.631354 - 0.211990I$ $b = -0.087210 + 0.961580I$	$1.16980 + 3.77509I$	$-2.33539 - 3.30863I$
$u = 1.079770 - 0.566501I$ $a = -0.631354 + 0.211990I$ $b = -0.087210 - 0.961580I$	$1.16980 - 3.77509I$	$-2.33539 + 3.30863I$
$u = -1.109630 + 0.577628I$ $a = 1.22405 - 1.33864I$ $b = 1.35649 + 0.51125I$	$-3.19455 - 8.83044I$	$-3.92140 + 6.56535I$
$u = -1.109630 - 0.577628I$ $a = 1.22405 + 1.33864I$ $b = 1.35649 - 0.51125I$	$-3.19455 + 8.83044I$	$-3.92140 - 6.56535I$
$u = -1.244540 + 0.593740I$ $a = -0.326614 + 0.803021I$ $b = -0.816237 - 0.239357I$	$-0.28328 - 8.29218I$	$-6.85575 + 7.14384I$
$u = -1.244540 - 0.593740I$ $a = -0.326614 - 0.803021I$ $b = -0.816237 + 0.239357I$	$-0.28328 + 8.29218I$	$-6.85575 - 7.14384I$
$u = 0.508749 + 0.173453I$ $a = 2.66319 + 4.04300I$ $b = 1.254260 - 0.252501I$	$-5.43384 - 2.60736I$	$-6.61005 + 1.10855I$
$u = 0.508749 - 0.173453I$ $a = 2.66319 - 4.04300I$ $b = 1.254260 + 0.252501I$	$-5.43384 + 2.60736I$	$-6.61005 - 1.10855I$
$u = -0.533548 + 0.021243I$ $a = 1.16611 - 5.64644I$ $b = 1.070490 + 0.296067I$	$-4.79002 - 5.38029I$	$-5.23955 + 8.87254I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.533548 - 0.021243I$ $a = 1.16611 + 5.64644I$ $b = 1.070490 - 0.296067I$	$-4.79002 + 5.38029I$	$-5.23955 - 8.87254I$
$u = -0.67080 + 1.33154I$ $a = -1.58711 + 0.44198I$ $b = -1.281620 + 0.541938I$	$-5.29738 + 2.79205I$	0
$u = -0.67080 - 1.33154I$ $a = -1.58711 - 0.44198I$ $b = -1.281620 - 0.541938I$	$-5.29738 - 2.79205I$	0
$u = -0.483281 + 0.104416I$ $a = -1.92146 + 0.25924I$ $b = -1.47927 + 0.22060I$	$-6.54530 + 4.65043I$	$9.47001 + 3.40221I$
$u = -0.483281 - 0.104416I$ $a = -1.92146 - 0.25924I$ $b = -1.47927 - 0.22060I$	$-6.54530 - 4.65043I$	$9.47001 - 3.40221I$
$u = -2.24990$ $a = 0.782694$ $b = 1.04378$	$-3.13685$	0

### III. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$4(2u^{26} - 3u^{25} + \dots + 5u + 1)(2u^{115} + 9u^{114} + \dots + 2406u - 767)$
$c_2$	$4(2u^{26} - 5u^{25} + \dots - 2u + 1)(2u^{115} + 3u^{114} + \dots + 3u - 1)$
$c_3$	$(u^{26} + 2u^{25} + \dots - 5u - 1)(u^{115} - 9u^{114} + \dots - 4u + 1)$
$c_4$	$(u^{26} + 3u^{25} + \dots - 5u - 1)(u^{115} - 2u^{114} + \dots - 3876u - 1201)$
$c_5$	$4(2u^{26} + 5u^{25} + \dots + 2u + 1)(2u^{115} + 3u^{114} + \dots + 3u - 1)$
$c_6$	$(u^{26} + u^{25} + \dots + 57u + 28)(u^{115} - 13u^{113} + \dots + 85279u - 38788)$
$c_7$	$(u^{26} - u^{25} + \dots + 21u + 2)(u^{115} - 4u^{114} + \dots + 1.15703 \times 10^7 u + 823526)$
$c_8$	$4(2u^{26} + u^{25} + \dots - 7u - 1)(2u^{115} - u^{114} + \dots + 114u - 7)$
$c_9$	$16(4u^{26} + 61u^{25} + \dots + 12u + 1)$ $\cdot (4u^{115} + 57u^{114} + \dots + 15305u + 10639)$
$c_{10}$	$(u^{26} - 3u^{25} + \dots + 5u - 1)(u^{115} - 2u^{114} + \dots - 3876u - 1201)$
$c_{11}$	$(u^{26} - 4u^{25} + \dots - 17u - 2)(u^{115} + 9u^{114} + \dots - 183323u - 19982)$

#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1$	$16(4y^{26} - 69y^{25} + \dots - 7y + 1)$ $\cdot (4y^{115} - 105y^{114} + \dots + 35082100y - 588289)$
$c_2, c_5$	$16(4y^{26} - 73y^{25} + \dots - 30y + 1)(4y^{115} - 237y^{114} + \dots + 27y - 1)$
$c_3$	$(y^{26} + 2y^{25} + \dots - 3y + 1)(y^{115} - 11y^{114} + \dots + 180y - 1)$
$c_4, c_{10}$	$(y^{26} - 15y^{25} + \dots + y + 1)$ $\cdot (y^{115} - 76y^{114} + \dots + 36617356y - 1442401)$
$c_6$	$(y^{26} - 9y^{25} + \dots - 9857y + 784)$ $\cdot (y^{115} - 26y^{114} + \dots + 89633162793y - 1504508944)$
$c_7$	$(y^{26} + 15y^{25} + \dots - 53y + 4)$ $\cdot (y^{115} + 54y^{114} + \dots - 20235629660847y - 678195072676)$
$c_8$	$16(4y^{26} - 41y^{25} + \dots - 17y + 1)(4y^{115} - 61y^{114} + \dots + 886y - 49)$
$c_9$	$256(16y^{26} - 553y^{25} + \dots - 32y + 1)$ $\cdot (16y^{115} - 537y^{114} + \dots + 2204032597y - 113188321)$
$c_{11}$	$(y^{26} - 4y^{25} + \dots - 429y + 4)$ $\cdot (y^{115} + 23y^{114} + \dots - 4932760351y - 399280324)$