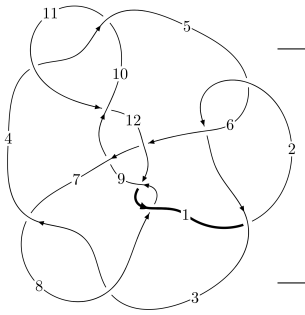
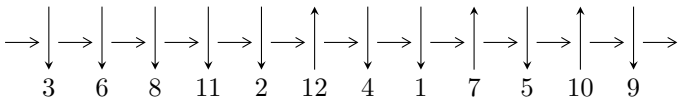
$12a_{0326}$ $(K12a_{0326})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 2.14647 \times 10^{625} u^{136} - 1.57204 \times 10^{626} u^{135} + \cdots + 5.04273 \times 10^{627} b + 2.01485 \times 10^{628}, \\ & - 9.52837 \times 10^{628} u^{136} + 5.76897 \times 10^{629} u^{135} + \cdots + 5.60247 \times 10^{630} a - 2.60191 \times 10^{633}, \\ & u^{137} - 8u^{136} + \cdots + 109806u + 32219 \rangle \\ I_2^u = \langle & 969227805421 u^{29} + 4997352190301 u^{28} + \cdots + 7614592375217 b - 1781800267381, \\ & - 8214623303611 u^{29} - 14241638447196 u^{28} + \cdots + 7614592375217 a - 12651568687672, \\ & u^{30} + u^{29} + \cdots + 2u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 167 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. $\boldsymbol{I_1^u = \langle 2.15 \times 10^{625} u^{136} - 1.57 \times 10^{626} u^{135} + \cdots + 5.04 \times 10^{627} b + 2.01 \times 10^{628},\ -9.53 \times 10^{628} u^{136} + 5.77 \times 10^{629} u^{135} + \cdots + 5.60 \times 10^{630} a - 2.60 \times 10^{633},\ u^{137} - 8u^{136} + \cdots + 109806u + 32219 \rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 0.0170074u^{136} - 0.102972u^{135} + \cdots + 1977.46u + 464.422 \\ -0.00425657u^{136} + 0.0311744u^{135} + \cdots - 54.0695u - 3.99556 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.0127509u^{136} - 0.0717974u^{135} + \cdots + 1923.39u + 460.426 \\ -0.00425657u^{136} + 0.0311744u^{135} + \cdots - 54.0695u - 3.99556 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.104079u^{136} - 0.731582u^{135} + \cdots + 5658.43u + 962.800 \\ 0.0141435u^{136} - 0.160591u^{135} + \cdots - 4271.95u - 1197.54 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0204806u^{136} - 0.164745u^{135} + \cdots - 957.487u - 341.646 \\ 0.0166880u^{136} - 0.118460u^{135} + \cdots + 830.580u + 151.032 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.154685u^{136} - 1.10541u^{135} + \cdots + 7925.61u + 1193.45 \\ -0.0228178u^{136} + 0.0717336u^{135} + \cdots - 8356.37u - 2109.51 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 0.0414287u^{136} - 0.278536u^{135} + \cdots + 3054.14u + 617.717 \\ 0.0316584u^{136} - 0.266647u^{135} + \cdots - 1739.62u - 622.793 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.164628u^{136} + 1.24456u^{135} + \cdots - 2428.11u + 289.540 \\ 0.0406849u^{136} - 0.234576u^{135} + \cdots + 6901.62u + 1587.49 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.148430u^{136} + 0.926021u^{135} + \cdots - 18759.7u - 4096.98 \\ -0.00521443u^{136} + 0.202164u^{135} + \cdots + 12862.6u + 3478.39 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0777998u^{136} - 0.574500u^{135} + \cdots + 4442.71u + 535.291$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{137} + 51u^{136} + \cdots + 28u + 1$
c_2, c_5	$u^{137} + 3u^{136} + \cdots - 10u + 1$
c_3, c_7	$u^{137} + u^{136} + \cdots - 450658u + 20477$
c_4, c_{10}	$u^{137} - u^{136} + \cdots + 6u^2 + 1$
c_6	$u^{137} - 2u^{136} + \cdots - 4683u + 2473$
c_8, c_{12}	$u^{137} - 8u^{136} + \cdots + 109806u + 32219$
c_9	$u^{137} + 16u^{136} + \cdots + 3863u + 251$
c_{11}	$u^{137} - 63u^{136} + \cdots - 12u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{137} + 85y^{136} + \cdots - 8004y - 1$
c_2, c_5	$y^{137} - 51y^{136} + \cdots + 28y - 1$
c_3, c_7	$y^{137} + 115y^{136} + \cdots - 17103469262y - 419307529$
c_4, c_{10}	$y^{137} + 63y^{136} + \cdots - 12y - 1$
c_6	$y^{137} - 12y^{136} + \cdots + 196459991y - 6115729$
c_8, c_{12}	$y^{137} + 118y^{136} + \cdots + 87908229568y - 1038063961$
c_9	$y^{137} - 22y^{136} + \cdots + 8590039y - 63001$
c_{11}	$y^{137} + 39y^{136} + \cdots + 44y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.600215+0.825884I$ $a=\ \ 0.341214+0.182187I$ $b=\ \ 0.0429581+0.0446813I$	$-0.76985+2.36523I$	0
$u=-0.600215-0.825884I$ $a=\ \ 0.341214-0.182187I$ $b=\ \ 0.0429581-0.0446813I$	$-0.76985-2.36523I$	0
$u=\ \ 0.276628+0.934882I$ $a=\ \ 0.134951+0.863792I$ $b=-0.754988-0.080370I$	$0.027372-1.013400I$	0
$u=\ \ 0.276628-0.934882I$ $a=\ \ 0.134951-0.863792I$ $b=-0.754988+0.080370I$	$0.027372+1.013400I$	0
$u=\ \ 0.277443+1.042560I$ $a=-0.56568+1.72089I$ $b=\ \ 0.509378-0.961639I$	$2.76698+4.14223I$	0
$u=\ \ 0.277443-1.042560I$ $a=-0.56568-1.72089I$ $b=\ \ 0.509378+0.961639I$	$2.76698-4.14223I$	0
$u=-0.810726+0.376962I$ $a=\ \ 0.625383+0.386915I$ $b=\ \ 0.719560-0.588147I$	$-4.43117+3.80080I$	0
$u=-0.810726-0.376962I$ $a=\ \ 0.625383-0.386915I$ $b=\ \ 0.719560+0.588147I$	$-4.43117-3.80080I$	0
$u=\ \ 0.405570+0.762614I$ $a=-0.577183-0.645655I$ $b=\ \ 0.565672+0.632820I$	$2.17077-6.60754I$	0
$u=\ \ 0.405570-0.762614I$ $a=-0.577183+0.645655I$ $b=\ \ 0.565672-0.632820I$	$2.17077+6.60754I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.480617+0.678664I$ $a=\ \ 0.319527-0.525767I$ $b=-0.342427+0.558103I$	$-0.09125+2.10745I$	0
$u=-0.480617-0.678664I$ $a=\ \ 0.319527+0.525767I$ $b=-0.342427-0.558103I$	$-0.09125-2.10745I$	0
$u=\ \ 0.365595+1.115550I$ $a=-0.320099-0.727207I$ $b=-0.124434+0.427629I$	$3.82283+0.95919I$	0
$u=\ \ 0.365595-1.115550I$ $a=-0.320099+0.727207I$ $b=-0.124434-0.427629I$	$3.82283-0.95919I$	0
$u=\ \ 1.104240+0.401110I$ $a=\ \ 0.113677-0.484296I$ $b=\ \ 0.282562+1.184250I$	$3.38915-7.43186I$	0
$u=\ \ 1.104240-0.401110I$ $a=\ \ 0.113677+0.484296I$ $b=\ \ 0.282562-1.184250I$	$3.38915+7.43186I$	0
$u=\ \ 0.250630+1.162460I$ $a=-0.58140+2.21392I$ $b=\ \ 0.022548-1.349140I$	$5.36671-3.68922I$	0
$u=\ \ 0.250630-1.162460I$ $a=-0.58140-2.21392I$ $b=\ \ 0.022548+1.349140I$	$5.36671+3.68922I$	0
$u=\ \ 0.509415+1.076190I$ $a=\ \ 0.524591+0.518478I$ $b=-0.886419+0.425051I$	$-1.57184-5.75032I$	0
$u=\ \ 0.509415-1.076190I$ $a=\ \ 0.524591-0.518478I$ $b=-0.886419-0.425051I$	$-1.57184+5.75032I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.584119+1.041150I$ $a=-0.460558+0.276017I$ $b=\ \ 0.676065+0.560471I$	$-2.46994+1.25079I$	0
$u=-0.584119-1.041150I$ $a=-0.460558-0.276017I$ $b=\ \ 0.676065-0.560471I$	$-2.46994-1.25079I$	0
$u=-0.144415+1.190800I$ $a=\ \ 0.457281-0.122460I$ $b=-1.212230+0.285741I$	$1.47034+1.58354I$	0
$u=-0.144415-1.190800I$ $a=\ \ 0.457281+0.122460I$ $b=-1.212230-0.285741I$	$1.47034-1.58354I$	0
$u=-0.753738+0.257933I$ $a=\ \ 0.795857-0.701646I$ $b=\ \ 0.576601+0.874596I$	$-3.62189-1.01410I$	0
$u=-0.753738-0.257933I$ $a=\ \ 0.795857+0.701646I$ $b=\ \ 0.576601-0.874596I$	$-3.62189+1.01410I$	0
$u=-0.335437+1.157330I$ $a=\ \ 0.25846+1.95888I$ $b=-0.141406-0.950478I$	$0.252574+1.080440I$	0
$u=-0.335437-1.157330I$ $a=\ \ 0.25846-1.95888I$ $b=-0.141406+0.950478I$	$0.252574-1.080440I$	0
$u=\ \ 0.173074+1.196750I$ $a=-0.613118-0.319995I$ $b=\ \ 1.36621+0.38306I$	$3.36982-6.59254I$	0
$u=\ \ 0.173074-1.196750I$ $a=-0.613118+0.319995I$ $b=\ \ 1.36621-0.38306I$	$3.36982+6.59254I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.252583 + 1.193810I$ $a = -0.48841 + 2.77901I$ $b = -0.325330 - 1.160690I$	$0.75973 - 9.92657I$	0
$u = 0.252583 - 1.193810I$ $a = -0.48841 - 2.77901I$ $b = -0.325330 + 1.160690I$	$0.75973 + 9.92657I$	0
$u = 0.401665 + 0.667335I$ $a = -0.191681 - 0.810457I$ $b = 0.128406 + 0.873969I$	$3.65193 + 0.66673I$	0
$u = 0.401665 - 0.667335I$ $a = -0.191681 + 0.810457I$ $b = 0.128406 - 0.873969I$	$3.65193 - 0.66673I$	0
$u = -0.259460 + 1.196040I$ $a = 0.33681 + 2.61041I$ $b = 0.245278 - 1.105050I$	$-0.75094 + 4.51996I$	0
$u = -0.259460 - 1.196040I$ $a = 0.33681 - 2.61041I$ $b = 0.245278 + 1.105050I$	$-0.75094 - 4.51996I$	0
$u = -0.043599 + 1.224900I$ $a = -0.081497 + 0.491243I$ $b = -0.773182 + 0.003155I$	$0.851004 - 0.795140I$	0
$u = -0.043599 - 1.224900I$ $a = -0.081497 - 0.491243I$ $b = -0.773182 - 0.003155I$	$0.851004 + 0.795140I$	0
$u = -0.272248 + 1.198580I$ $a = 1.73020 + 1.65034I$ $b = 0.246093 - 1.307720I$	$6.31626 + 8.78487I$	0
$u = -0.272248 - 1.198580I$ $a = 1.73020 - 1.65034I$ $b = 0.246093 + 1.307720I$	$6.31626 - 8.78487I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.258801 + 1.202340I$ $a = -1.24707 + 1.88429I$ $b = -0.356991 - 1.338480I$	$5.05012 - 5.03282I$	0
$u = \quad 0.258801 - 1.202340I$ $a = -1.24707 - 1.88429I$ $b = -0.356991 + 1.338480I$	$5.05012 + 5.03282I$	0
$u = \quad 0.721061 + 0.261174I$ $a = -0.765255 + 0.337826I$ $b = -0.857391 - 0.405574I$	$-3.95395 + 1.20522I$	0
$u = \quad 0.721061 - 0.261174I$ $a = -0.765255 - 0.337826I$ $b = -0.857391 + 0.405574I$	$-3.95395 - 1.20522I$	0
$u = -0.212759 + 1.219960I$ $a = \quad 0.39889 + 2.02793I$ $b = \quad 0.61084 - 1.77061I$	$7.76381 + 1.99463I$	0
$u = -0.212759 - 1.219960I$ $a = \quad 0.39889 - 2.02793I$ $b = \quad 0.61084 + 1.77061I$	$7.76381 - 1.99463I$	0
$u = -0.286333 + 1.210290I$ $a = \quad 1.61945 + 0.94113I$ $b = \quad 0.169209 - 1.077120I$	$6.76255 + 2.94842I$	0
$u = -0.286333 - 1.210290I$ $a = \quad 1.61945 - 0.94113I$ $b = \quad 0.169209 + 1.077120I$	$6.76255 - 2.94842I$	0
$u = \quad 0.243282 + 1.224860I$ $a = -0.64177 + 1.67068I$ $b = -0.60807 - 1.39180I$	$5.39433 - 5.32907I$	0
$u = \quad 0.243282 - 1.224860I$ $a = -0.64177 - 1.67068I$ $b = -0.60807 + 1.39180I$	$5.39433 + 5.32907I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.699243 + 0.265046I$ $a = -0.902246 - 0.458831I$ $b = -0.627171 + 1.038880I$	$-2.08258 + 6.56291I$	0
$u = 0.699243 - 0.265046I$ $a = -0.902246 + 0.458831I$ $b = -0.627171 - 1.038880I$	$-2.08258 - 6.56291I$	0
$u = 0.133455 + 1.251360I$ $a = 0.084175 - 0.523657I$ $b = 0.895480 + 0.648314I$	$6.23673 + 0.17961I$	0
$u = 0.133455 - 1.251360I$ $a = 0.084175 + 0.523657I$ $b = 0.895480 - 0.648314I$	$6.23673 - 0.17961I$	0
$u = -0.221879 + 1.250790I$ $a = 0.11965 + 1.70945I$ $b = 1.01410 - 1.57896I$	$7.61960 + 8.66163I$	0
$u = -0.221879 - 1.250790I$ $a = 0.11965 - 1.70945I$ $b = 1.01410 + 1.57896I$	$7.61960 - 8.66163I$	0
$u = 0.301681 + 1.242530I$ $a = -0.725555 + 0.385722I$ $b = -0.484597 - 0.574971I$	$5.79279 - 5.78435I$	0
$u = 0.301681 - 1.242530I$ $a = -0.725555 - 0.385722I$ $b = -0.484597 + 0.574971I$	$5.79279 + 5.78435I$	0
$u = -0.063134 + 1.281760I$ $a = -1.23684 - 2.14792I$ $b = -0.011264 + 1.216080I$	$8.36571 - 4.84327I$	0
$u = -0.063134 - 1.281760I$ $a = -1.23684 + 2.14792I$ $b = -0.011264 - 1.216080I$	$8.36571 + 4.84327I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.134330+0.617531I$ $a=-0.127196-0.486382I$ $b=-0.126525+1.070720I$	$0.54578+1.90911I$	0
$u=-1.134330-0.617531I$ $a=-0.127196+0.486382I$ $b=-0.126525-1.070720I$	$0.54578-1.90911I$	0
$u=0.275113+1.263970I$ $a=-0.281993+0.830321I$ $b=-0.913446-0.799643I$	$5.75402-5.70433I$	0
$u=0.275113-1.263970I$ $a=-0.281993-0.830321I$ $b=-0.913446+0.799643I$	$5.75402+5.70433I$	0
$u=0.069435+1.294050I$ $a=0.579558+0.665158I$ $b=0.445851-0.025283I$	$2.09940+6.03519I$	0
$u=0.069435-1.294050I$ $a=0.579558-0.665158I$ $b=0.445851+0.025283I$	$2.09940-6.03519I$	0
$u=-0.026064+1.295990I$ $a=-0.48548-2.61453I$ $b=-0.008508+1.375680I$	$9.41866+1.21222I$	0
$u=-0.026064-1.295990I$ $a=-0.48548+2.61453I$ $b=-0.008508-1.375680I$	$9.41866-1.21222I$	0
$u=0.081715+1.302440I$ $a=0.81523-1.72233I$ $b=0.201606+1.228170I$	$6.74367+0.78269I$	0
$u=0.081715-1.302440I$ $a=0.81523+1.72233I$ $b=0.201606-1.228170I$	$6.74367-0.78269I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.297150 + 0.204185I$ $a = -0.219346 + 0.377698I$ $b = -0.388633 - 1.344330I$	$2.21246 - 12.85340I$	0
$u = 1.297150 - 0.204185I$ $a = -0.219346 - 0.377698I$ $b = -0.388633 + 1.344330I$	$2.21246 + 12.85340I$	0
$u = -0.677201 + 0.041589I$ $a = 0.80512 - 1.49239I$ $b = 0.677223 + 0.180341I$	$-3.72494 + 3.01705I$	$-13.21532 - 1.96138I$
$u = -0.677201 - 0.041589I$ $a = 0.80512 + 1.49239I$ $b = 0.677223 - 0.180341I$	$-3.72494 - 3.01705I$	$-13.21532 + 1.96138I$
$u = 0.117160 + 1.322660I$ $a = 0.37918 - 1.50554I$ $b = 0.49170 + 1.36391I$	$6.72024 + 0.53681I$	0
$u = 0.117160 - 1.322660I$ $a = 0.37918 + 1.50554I$ $b = 0.49170 - 1.36391I$	$6.72024 - 0.53681I$	0
$u = -0.161042 + 1.342350I$ $a = -0.05597 - 1.61600I$ $b = -0.80150 + 1.70452I$	$8.26014 + 3.01778I$	0
$u = -0.161042 - 1.342350I$ $a = -0.05597 + 1.61600I$ $b = -0.80150 - 1.70452I$	$8.26014 - 3.01778I$	0
$u = -0.407256 + 1.294530I$ $a = 0.026183 - 0.389081I$ $b = 0.680029 + 0.369673I$	$1.35104 + 3.81155I$	0
$u = -0.407256 - 1.294530I$ $a = 0.026183 + 0.389081I$ $b = 0.680029 - 0.369673I$	$1.35104 - 3.81155I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.610534+0.186046I$ $a=\ \ 0.445388+0.957310I$ $b=-0.03359+1.41643I$	$3.24778-5.49829I$	$-5.00006+6.13472I$
$u=-0.610534-0.186046I$ $a=\ \ 0.445388-0.957310I$ $b=-0.03359-1.41643I$	$3.24778+5.49829I$	$-5.00006-6.13472I$
$u=\ \ 0.286945+1.332370I$ $a=\ \ 0.527188+0.317971I$ $b=-1.57004-0.11173I$	$2.31371-11.85850I$	0
$u=\ \ 0.286945-1.332370I$ $a=\ \ 0.527188-0.317971I$ $b=-1.57004+0.11173I$	$2.31371+11.85850I$	0
$u=-0.306302+1.331350I$ $a=-0.395801+0.146440I$ $b=\ \ 1.368200+0.027238I$	$0.67456+6.63501I$	0
$u=-0.306302-1.331350I$ $a=-0.395801-0.146440I$ $b=\ \ 1.368200-0.027238I$	$0.67456-6.63501I$	0
$u=\ \ 0.626514+0.050151I$ $a=-0.84200-1.70554I$ $b=-0.811167+0.011205I$	$-2.10741-8.46095I$	$-10.29053+6.92192I$
$u=\ \ 0.626514-0.050151I$ $a=-0.84200+1.70554I$ $b=-0.811167-0.011205I$	$-2.10741+8.46095I$	$-10.29053-6.92192I$
$u=\ \ 0.583255+0.219848I$ $a=-0.316978+0.624569I$ $b=-0.166804+1.320420I$	$2.04697+1.89378I$	$-8.30712+0.I$
$u=\ \ 0.583255-0.219848I$ $a=-0.316978-0.624569I$ $b=-0.166804-1.320420I$	$2.04697-1.89378I$	$-8.30712+0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.606620+0.139527I$ $a=\ \ 0.267987+1.177840I$ $b=-0.266261+1.165630I$	$3.51581+0.39606I$	$-4.02934-2.78608I$
$u=-0.606620-0.139527I$ $a=\ \ 0.267987-1.177840I$ $b=-0.266261-1.165630I$	$3.51581-0.39606I$	$-4.02934+2.78608I$
$u=-0.157220+1.386930I$ $a=-0.20262-1.78566I$ $b=-0.43911+2.00856I$	$8.39206-2.84568I$	0
$u=-0.157220-1.386930I$ $a=-0.20262+1.78566I$ $b=-0.43911-2.00856I$	$8.39206+2.84568I$	0
$u=-1.365400+0.316476I$ $a=\ \ 0.260102+0.452500I$ $b=\ \ 0.343139-1.221160I$	$-0.43097+6.85078I$	0
$u=-1.365400-0.316476I$ $a=\ \ 0.260102-0.452500I$ $b=\ \ 0.343139+1.221160I$	$-0.43097-6.85078I$	0
$u=\ \ 0.583549+0.102512I$ $a=-0.136693-0.917007I$ $b=\ \ 0.696924+0.132143I$	$0.25747+3.83112I$	$-5.71601-2.49405I$
$u=\ \ 0.583549-0.102512I$ $a=-0.136693+0.917007I$ $b=\ \ 0.696924-0.132143I$	$0.25747-3.83112I$	$-5.71601+2.49405I$
$u=-0.531137+0.228329I$ $a=\ \ 0.154180-0.733272I$ $b=-0.525007+0.334915I$	$-1.23027+0.80713I$	$-8.01143-3.82200I$
$u=-0.531137-0.228329I$ $a=\ \ 0.154180+0.733272I$ $b=-0.525007-0.334915I$	$-1.23027-0.80713I$	$-8.01143+3.82200I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.13412 + 1.42109I$ $a = 0.27480 - 1.72876I$ $b = 0.12100 + 1.91232I$	$7.51590 - 0.56584I$	0
$u = 0.13412 - 1.42109I$ $a = 0.27480 + 1.72876I$ $b = 0.12100 - 1.91232I$	$7.51590 + 0.56584I$	0
$u = 0.562181 + 0.080157I$ $a = -0.292233 + 1.307150I$ $b = 0.176536 + 0.354661I$	$2.25523 + 2.39599I$	$-5.21005 - 3.82646I$
$u = 0.562181 - 0.080157I$ $a = -0.292233 - 1.307150I$ $b = 0.176536 - 0.354661I$	$2.25523 - 2.39599I$	$-5.21005 + 3.82646I$
$u = 0.528989 + 0.104664I$ $a = 0.091902 + 1.360790I$ $b = -0.204011 + 0.867265I$	$2.14967 + 2.60628I$	$-6.80056 - 4.70746I$
$u = 0.528989 - 0.104664I$ $a = 0.091902 - 1.360790I$ $b = -0.204011 - 0.867265I$	$2.14967 - 2.60628I$	$-6.80056 + 4.70746I$
$u = 0.488642 + 0.156091I$ $a = 0.419703 + 1.008160I$ $b = -0.258118 + 1.102630I$	$2.13489 + 2.49230I$	$-4.55425 - 3.52768I$
$u = 0.488642 - 0.156091I$ $a = 0.419703 - 1.008160I$ $b = -0.258118 - 1.102630I$	$2.13489 - 2.49230I$	$-4.55425 + 3.52768I$
$u = 0.41429 + 1.47620I$ $a = 0.42248 - 1.73952I$ $b = 0.47672 + 1.49807I$	$9.2931 - 12.6983I$	0
$u = 0.41429 - 1.47620I$ $a = 0.42248 + 1.73952I$ $b = 0.47672 - 1.49807I$	$9.2931 + 12.6983I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.39699+1.49928I$ $a=-0.36502-1.66962I$ $b=-0.43485+1.44199I$	$7.01641+7.09040I$	0
$u=-0.39699-1.49928I$ $a=-0.36502+1.66962I$ $b=-0.43485-1.44199I$	$7.01641-7.09040I$	0
$u=-0.355655+0.220235I$ $a=-1.377970+0.136306I$ $b=0.278145+1.313290I$	$4.69066+0.36597I$	$-1.30932-2.96621I$
$u=-0.355655-0.220235I$ $a=-1.377970-0.136306I$ $b=0.278145-1.313290I$	$4.69066-0.36597I$	$-1.30932+2.96621I$
$u=0.53308+1.49033I$ $a=-0.57763+1.58115I$ $b=-0.61304-1.52807I$	$7.5580-19.2157I$	0
$u=0.53308-1.49033I$ $a=-0.57763-1.58115I$ $b=-0.61304+1.52807I$	$7.5580+19.2157I$	0
$u=-0.401352+0.098657I$ $a=-1.27049+1.55407I$ $b=0.491752+1.200300I$	$4.07486-6.17462I$	$-2.84721+7.18816I$
$u=-0.401352-0.098657I$ $a=-1.27049-1.55407I$ $b=0.491752-1.200300I$	$4.07486+6.17462I$	$-2.84721-7.18816I$
$u=-0.53092+1.51520I$ $a=0.53811+1.52732I$ $b=0.59065-1.44238I$	$5.2569+13.3633I$	0
$u=-0.53092-1.51520I$ $a=0.53811-1.52732I$ $b=0.59065+1.44238I$	$5.2569-13.3633I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.45204 + 1.54813I$ $a = 0.47060 - 1.51549I$ $b = 0.30697 + 1.48878I$	$12.88360 - 4.10984I$	0
$u = 0.45204 - 1.54813I$ $a = 0.47060 + 1.51549I$ $b = 0.30697 - 1.48878I$	$12.88360 + 4.10984I$	0
$u = -0.01080 + 1.62519I$ $a = 0.022968 - 1.374860I$ $b = -0.182649 + 1.339380I$	$4.75904 + 2.79200I$	0
$u = -0.01080 - 1.62519I$ $a = 0.022968 + 1.374860I$ $b = -0.182649 - 1.339380I$	$4.75904 - 2.79200I$	0
$u = 0.59925 + 1.52996I$ $a = -0.61806 + 1.40369I$ $b = -0.40324 - 1.42797I$	$11.6217 - 10.1999I$	0
$u = 0.59925 - 1.52996I$ $a = -0.61806 - 1.40369I$ $b = -0.40324 + 1.42797I$	$11.6217 + 10.1999I$	0
$u = 1.63472 + 0.19652I$ $a = -0.021975 - 0.544479I$ $b = -0.059158 + 1.259790I$	$6.62314 + 2.60802I$	0
$u = 1.63472 - 0.19652I$ $a = -0.021975 + 0.544479I$ $b = -0.059158 - 1.259790I$	$6.62314 - 2.60802I$	0
$u = 1.05809 + 1.50494I$ $a = -0.539942 + 0.960179I$ $b = -0.113754 - 1.134000I$	$5.75951 - 0.22579I$	0
$u = 1.05809 - 1.50494I$ $a = -0.539942 - 0.960179I$ $b = -0.113754 + 1.134000I$	$5.75951 + 0.22579I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.136913$ $a=\ \ 3.87210$ $b=-0.411336$	-0.911004	-11.2840
$u=-0.15252+1.86735I$ $a=-0.106104-1.238710I$ $b=-0.232113+1.275320I$	$4.81891+2.74844I$	0
$u=-0.15252-1.86735I$ $a=-0.106104+1.238710I$ $b=-0.232113-1.275320I$	$4.81891-2.74844I$	0
$u=-0.62929+1.84278I$ $a=\ \ 0.401169+1.219110I$ $b=\ \ 0.321940-1.106760I$	$3.49212+7.61632I$	0
$u=-0.62929-1.84278I$ $a=\ \ 0.401169-1.219110I$ $b=\ \ 0.321940+1.106760I$	$3.49212-7.61632I$	0
$u=\ \ 0.89716+1.80883I$ $a=\ \ 0.373769-0.969692I$ $b=\ \ 0.023776+1.291180I$	$6.14734+4.75780I$	0
$u=\ \ 0.89716-1.80883I$ $a=\ \ 0.373769+0.969692I$ $b=\ \ 0.023776-1.291180I$	$6.14734-4.75780I$	0

II.

$\boldsymbol{I_2^u = \langle 9.69\times10^{11}u^{29}+5.00\times10^{12}u^{28}+\cdots+7.61\times10^{12}b-1.78\times10^{12},\ -8.21\times10^{12}u^{29}-1.42\times10^{13}u^{28}+\cdots+7.61\times10^{12}a-1.27\times10^{13},\ u^{30}+u^{29}+\cdots+2u+1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix}0\\u\end{pmatrix}$$

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

$$a_4 = \begin{pmatrix}1.07880u^{29}+1.87031u^{28}+\cdots+6.98066u+1.66149\\-0.127286u^{29}-0.656286u^{28}+\cdots+0.815661u+0.233998\end{pmatrix}$$

$$a_9 = \begin{pmatrix}1\\u^2\end{pmatrix}$$

$$a_3 = \begin{pmatrix}0.951515u^{29}+1.21402u^{28}+\cdots+7.79632u+1.89549\\-0.127286u^{29}-0.656286u^{28}+\cdots+0.815661u+0.233998\end{pmatrix}$$

$$a_2 = \begin{pmatrix}1.44977u^{29}+2.25417u^{28}+\cdots+1.57036u+1.19725\\0.562682u^{29}-0.508894u^{28}+\cdots+1.00766u-0.00613589\end{pmatrix}$$

$$a_7 = \begin{pmatrix}0.0685465u^{29}+0.841396u^{28}+\cdots-3.15609u+0.792779\\-0.0624106u^{29}-0.272578u^{28}+\cdots-0.614245u+0.227151\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-1.11775u^{29}-1.10749u^{28}+\cdots+2.05886u+0.217486\\-0.950793u^{29}-0.733908u^{28}+\cdots+0.0972228u-0.0102653\end{pmatrix}$$

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

$$a_6 = \begin{pmatrix}0.00613589u^{29}+0.568818u^{28}+\cdots-3.77033u+0.0199295\\-0.133986u^{29}-0.526835u^{28}+\cdots-0.745745u-0.335531\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-0.674226u^{29}-1.48426u^{28}+\cdots-2.30183u-1.76154\\-1.13330u^{29}-0.127945u^{28}+\cdots+1.56908u+0.852693\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-2.15067u^{29}-0.761822u^{28}+\cdots+0.354677u+2.80358\\-0.875503u^{29}+0.178922u^{28}+\cdots+2.30824u+0.938891\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$$= -\frac{26703140571941}{7614592375217}u^{29}-\frac{13681643041353}{7614592375217}u^{28}+\cdots-\frac{89568892795504}{7614592375217}u-\frac{22427593702390}{7614592375217}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{30} - 14u^{29} + \cdots - 14u + 1$
c_2	$u^{30} + 2u^{29} + \cdots + 2u + 1$
c_3	$u^{30} + 16u^{28} + \cdots - 4u + 1$
c_4	$u^{30} + 8u^{28} + \cdots + 2u + 1$
c_5	$u^{30} - 2u^{29} + \cdots - 2u + 1$
c_6	$u^{30} - u^{29} + \cdots + 7u + 1$
c_7	$u^{30} + 16u^{28} + \cdots + 4u + 1$
c_8	$u^{30} + u^{29} + \cdots + 2u + 1$
c_9	$u^{30} - 3u^{29} + \cdots + u + 1$
c_{10}	$u^{30} + 8u^{28} + \cdots - 2u + 1$
c_{11}	$u^{30} - 16u^{29} + \cdots - 18u + 1$
c_{12}	$u^{30} - u^{29} + \cdots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{30} + 18y^{29} + \cdots + 2y + 1$
c_2, c_5	$y^{30} - 14y^{29} + \cdots - 14y + 1$
c_3, c_7	$y^{30} + 32y^{29} + \cdots + 12y + 1$
c_4, c_{10}	$y^{30} + 16y^{29} + \cdots + 18y + 1$
c_6	$y^{30} + y^{29} + \cdots - 9y + 1$
c_8, c_{12}	$y^{30} + 31y^{29} + \cdots + 14y + 1$
c_9	$y^{30} - 5y^{29} + \cdots - 9y + 1$
c_{11}	$y^{30} + 12y^{29} + \cdots - 38y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.522006 + 0.878409I$ $a = 0.174524 + 0.362277I$ $b = -0.522395 + 0.106070I$	$-1.12493 - 2.08959I$	$-12.37329 - 0.45284I$
$u = 0.522006 - 0.878409I$ $a = 0.174524 - 0.362277I$ $b = -0.522395 - 0.106070I$	$-1.12493 + 2.08959I$	$-12.37329 + 0.45284I$
$u = 0.580502 + 0.781634I$ $a = 0.079977 + 1.110490I$ $b = -0.285710 - 0.369681I$	$-1.07088 - 1.66964I$	$-11.34892 + 3.37717I$
$u = 0.580502 - 0.781634I$ $a = 0.079977 - 1.110490I$ $b = -0.285710 + 0.369681I$	$-1.07088 + 1.66964I$	$-11.34892 - 3.37717I$
$u = -0.658892 + 0.867526I$ $a = 0.885371 + 0.771691I$ $b = 0.202700 - 1.246440I$	$5.43916 + 1.20569I$	$-0.29178 - 2.33340I$
$u = -0.658892 - 0.867526I$ $a = 0.885371 - 0.771691I$ $b = 0.202700 + 1.246440I$	$5.43916 - 1.20569I$	$-0.29178 + 2.33340I$
$u = -0.254757 + 1.119880I$ $a = 1.13436 + 1.30510I$ $b = 0.498455 - 1.314340I$	$6.31642 + 7.63327I$	$-0.18303 - 5.98526I$
$u = -0.254757 - 1.119880I$ $a = 1.13436 - 1.30510I$ $b = 0.498455 + 1.314340I$	$6.31642 - 7.63327I$	$-0.18303 + 5.98526I$
$u = -0.396608 + 0.740773I$ $a = -0.716956 + 1.131870I$ $b = 0.700342 - 0.546826I$	$1.64081 + 6.14083I$	$-8.20173 - 4.13767I$
$u = -0.396608 - 0.740773I$ $a = -0.716956 - 1.131870I$ $b = 0.700342 + 0.546826I$	$1.64081 - 6.14083I$	$-8.20173 + 4.13767I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.346961 + 0.722605I$ $a = -1.44663 + 0.62621I$ $b = 0.239582 + 0.412642I$	$-2.17581 - 3.16922I$	$-7.99099 + 3.11007I$
$u = 0.346961 - 0.722605I$ $a = -1.44663 - 0.62621I$ $b = 0.239582 - 0.412642I$	$-2.17581 + 3.16922I$	$-7.99099 - 3.11007I$
$u = 0.201907 + 1.189600I$ $a = -1.05036 + 1.50279I$ $b = -0.569953 - 1.224480I$	$5.61608 - 4.26764I$	$-70.0956014 + 0.10I$
$u = 0.201907 - 1.189600I$ $a = -1.05036 - 1.50279I$ $b = -0.569953 + 1.224480I$	$5.61608 + 4.26764I$	$-70.0956014 + 0.10I$
$u = -0.217304 + 0.711721I$ $a = 1.93148 + 0.80426I$ $b = -0.405710 + 0.552639I$	$-0.49937 + 8.34773I$	$-4.55245 - 7.24511I$
$u = -0.217304 - 0.711721I$ $a = 1.93148 - 0.80426I$ $b = -0.405710 - 0.552639I$	$-0.49937 - 8.34773I$	$-4.55245 + 7.24511I$
$u = -0.115006 + 1.298860I$ $a = -0.43331 - 1.95090I$ $b = -0.12479 + 1.72136I$	$8.05808 + 1.30972I$	$1.85659 - 2.62857I$
$u = -0.115006 - 1.298860I$ $a = -0.43331 + 1.95090I$ $b = -0.12479 - 1.72136I$	$8.05808 - 1.30972I$	$1.85659 + 2.62857I$
$u = 0.035132 + 1.337570I$ $a = 0.11366 - 1.91500I$ $b = 0.29046 + 1.74271I$	$7.87534 + 1.73167I$	$0.51091 - 3.18280I$
$u = 0.035132 - 1.337570I$ $a = 0.11366 + 1.91500I$ $b = 0.29046 - 1.74271I$	$7.87534 - 1.73167I$	$0.51091 + 3.18280I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.62944+1.34305I$ $a=-0.624614-1.011460I$ $b=\ \ 0.021709+1.356000I$	$5.89793-4.22625I$	$-1.34831+2.43844I$
$u=-0.62944-1.34305I$ $a=-0.624614+1.011460I$ $b=\ \ 0.021709-1.356000I$	$5.89793+4.22625I$	$-1.34831-2.43844I$
$u=\ \ 0.259808+0.366084I$ $a=\ \ 1.53491+1.37268I$ $b=-0.190414+1.069450I$	$3.03572+2.17126I$	$1.83066-2.11907I$
$u=\ \ 0.259808-0.366084I$ $a=\ \ 1.53491-1.37268I$ $b=-0.190414-1.069450I$	$3.03572-2.17126I$	$1.83066+2.11907I$
$u=-0.319221+0.222101I$ $a=-0.08687+2.98534I$ $b=\ \ 0.182935-0.889900I$	$3.51917-1.85555I$	$0.05388+3.21427I$
$u=-0.319221-0.222101I$ $a=-0.08687-2.98534I$ $b=\ \ 0.182935+0.889900I$	$3.51917+1.85555I$	$0.05388-3.21427I$
$u=\ \ 0.29140+1.59039I$ $a=-0.51828+1.34005I$ $b=-0.370825-1.018460I$	$3.45327-7.01722I$	0
$u=\ \ 0.29140-1.59039I$ $a=-0.51828-1.34005I$ $b=-0.370825+1.018460I$	$3.45327+7.01722I$	0
$u=-0.14649+1.81277I$ $a=\ \ 0.022740-1.200550I$ $b=\ \ 0.333614+1.259170I$	$5.01198-2.43840I$	0
$u=-0.14649-1.81277I$ $a=\ \ 0.022740+1.200550I$ $b=\ \ 0.333614-1.259170I$	$5.01198+2.43840I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{30}-14u^{29}+\cdots-14u+1)(u^{137}+51u^{136}+\cdots+28u+1)$
c_2	$(u^{30}+2u^{29}+\cdots+2u+1)(u^{137}+3u^{136}+\cdots-10u+1)$
c_3	$(u^{30}+16u^{28}+\cdots-4u+1)(u^{137}+u^{136}+\cdots-450658u+20477)$
c_4	$(u^{30}+8u^{28}+\cdots+2u+1)(u^{137}-u^{136}+\cdots+6u^2+1)$
c_5	$(u^{30}-2u^{29}+\cdots-2u+1)(u^{137}+3u^{136}+\cdots-10u+1)$
c_6	$(u^{30}-u^{29}+\cdots+7u+1)(u^{137}-2u^{136}+\cdots-4683u+2473)$
c_7	$(u^{30}+16u^{28}+\cdots+4u+1)(u^{137}+u^{136}+\cdots-450658u+20477)$
c_8	$(u^{30}+u^{29}+\cdots+2u+1)(u^{137}-8u^{136}+\cdots+109806u+32219)$
c_9	$(u^{30}-3u^{29}+\cdots+u+1)(u^{137}+16u^{136}+\cdots+3863u+251)$
c_{10}	$(u^{30}+8u^{28}+\cdots-2u+1)(u^{137}-u^{136}+\cdots+6u^2+1)$
c_{11}	$(u^{30}-16u^{29}+\cdots-18u+1)(u^{137}-63u^{136}+\cdots-12u+1)$
c_{12}	$(u^{30}-u^{29}+\cdots-2u+1)(u^{137}-8u^{136}+\cdots+109806u+32219)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{30}+18y^{29}+\cdots+2y+1)(y^{137}+85y^{136}+\cdots-8004y-1)$
c_2, c_5	$(y^{30}-14y^{29}+\cdots-14y+1)(y^{137}-51y^{136}+\cdots+28y-1)$
c_3, c_7	$(y^{30}+32y^{29}+\cdots+12y+1)$ $\cdot(y^{137}+115y^{136}+\cdots-17103469262y-419307529)$
c_4, c_{10}	$(y^{30}+16y^{29}+\cdots+18y+1)(y^{137}+63y^{136}+\cdots-12y-1)$
c_6	$(y^{30}+y^{29}+\cdots-9y+1)$ $\cdot(y^{137}-12y^{136}+\cdots+196459991y-6115729)$
c_8, c_{12}	$(y^{30}+31y^{29}+\cdots+14y+1)$ $\cdot(y^{137}+118y^{136}+\cdots+87908229568y-1038063961)$
c_9	$(y^{30}-5y^{29}+\cdots-9y+1)(y^{137}-22y^{136}+\cdots+8590039y-63001)$
c_{11}	$(y^{30}+12y^{29}+\cdots-38y+1)(y^{137}+39y^{136}+\cdots+44y-1)$