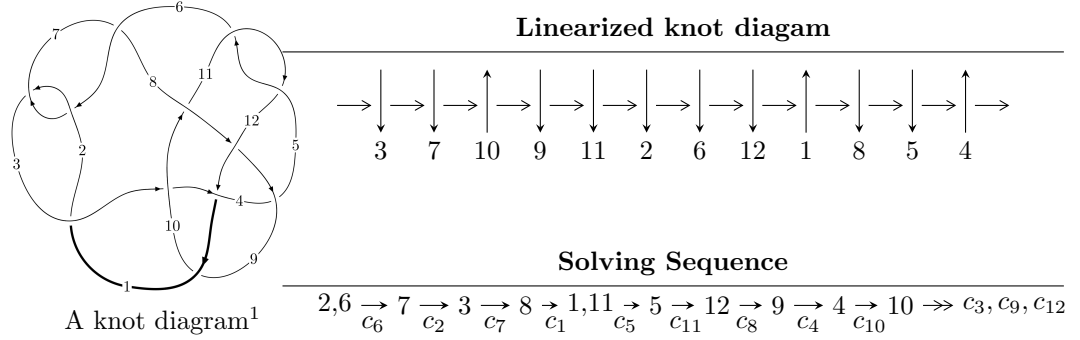


12a₀₆₃₃ (K12a₀₆₃₃)



Ideals for irreducible components² of X_{par}

$$I_1^u = \langle -5.15499 \times 10^{196} u^{129} + 3.24861 \times 10^{196} u^{128} + \dots + 1.37901 \times 10^{195} b - 1.57265 \times 10^{198}, \\ - 1.02606 \times 10^{197} u^{129} + 6.86879 \times 10^{196} u^{128} + \dots + 1.37901 \times 10^{195} a - 2.82868 \times 10^{198}, \\ u^{130} - 18u^{128} + \dots + 24u + 19 \rangle$$

$$I_2^u = \langle -13u^{20} - 15u^{19} + \dots + b + 14, 19u^{20} + 35u^{19} + \dots + a - 59, u^{21} + u^{20} + \dots - u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 151 representations.

¹The 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>).

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

$$\mathbf{I. } I_1^u = \langle -5.15 \times 10^{196} u^{129} + 3.25 \times 10^{196} u^{128} + \dots + 1.38 \times 10^{195} b - 1.57 \times 10^{198}, -1.03 \times 10^{197} u^{129} + 6.87 \times 10^{196} u^{128} + \dots + 1.38 \times 10^{195} a - 2.83 \times 10^{198}, u^{130} - 18u^{128} + \dots + 24u + 19 \rangle$$

(i) Arc colorings

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

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

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

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

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

$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 74.4057u^{129} - 49.8096u^{128} + \dots - 355.205u + 2051.24 \\ 37.3818u^{129} - 23.5575u^{128} + \dots - 376.747u + 1140.42 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 139.212u^{129} - 96.6569u^{128} + \dots - 847.639u + 3887.02 \\ 141.255u^{129} - 98.2425u^{128} + \dots - 673.486u + 3861.62 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 604.791u^{129} - 416.864u^{128} + \dots - 3262.60u + 16766.7 \\ 548.815u^{129} - 376.029u^{128} + \dots - 2908.26u + 15158.3 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 75.2273u^{129} - 49.1018u^{128} + \dots - 463.385u + 2139.10 \\ 44.2171u^{129} - 27.8912u^{128} + \dots - 437.538u + 1348.93 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 174.835u^{129} - 119.982u^{128} + \dots - 1033.66u + 4885.75 \\ 147.231u^{129} - 101.881u^{128} + \dots - 772.157u + 4071.79 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 68.3738u^{129} - 46.0275u^{128} + \dots - 388.370u + 1947.21 \\ 32.4426u^{129} - 19.4696u^{128} + \dots - 357.179u + 990.890 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $10825.7u^{129} - 7363.34u^{128} + \dots - 62607.4u + 302443$.

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{130} + 36u^{129} + \dots + 5212u + 361$
c_2, c_6	$u^{130} - 18u^{128} + \dots + 24u + 19$
c_3	$u^{130} - 2u^{129} + \dots + 3935u - 631$
c_4	$u^{130} + 3u^{129} + \dots + 1170u - 47$
c_5, c_{11}	$u^{130} - 2u^{129} + \dots - 142u - 118$
c_8	$u^{130} - u^{129} + \dots - 21u + 1$
c_9	$u^{130} - 4u^{129} + \dots - 29836u - 4154$
c_{10}	$u^{130} + u^{129} + \dots + 15754265u + 1219943$
c_{12}	$u^{130} + 4u^{129} + \dots - 253u - 29$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{130} + 124y^{129} + \dots - 5800964y + 130321$
c_2, c_6	$y^{130} - 36y^{129} + \dots - 5212y + 361$
c_3	$y^{130} - 28y^{129} + \dots - 8496531y + 398161$
c_4	$y^{130} + 35y^{129} + \dots + 573328y + 2209$
c_5, c_{11}	$y^{130} + 94y^{129} + \dots + 551900y + 13924$
c_8	$y^{130} - 3y^{129} + \dots - 123y + 1$
c_9	$y^{130} - 36y^{129} + \dots - 1371735192y + 17255716$
c_{10}	$y^{130} + 59y^{129} + \dots - 175337048515489y + 1488260923249$
c_{12}	$y^{130} + 10y^{129} + \dots + 55007y + 841$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.971820 + 0.318322I$ $a = -1.96058 + 0.11989I$ $b = -0.328312 - 1.013250I$	$-1.59255 - 5.76211I$	0
$u = 0.971820 - 0.318322I$ $a = -1.96058 - 0.11989I$ $b = -0.328312 + 1.013250I$	$-1.59255 + 5.76211I$	0
$u = -1.017450 + 0.170828I$ $a = -1.53911 + 0.53482I$ $b = -0.265359 + 1.259990I$	$-0.52079 + 5.09722I$	0
$u = -1.017450 - 0.170828I$ $a = -1.53911 - 0.53482I$ $b = -0.265359 - 1.259990I$	$-0.52079 - 5.09722I$	0
$u = -0.941754 + 0.219556I$ $a = -0.025305 - 0.709280I$ $b = -0.178765 - 0.810853I$	$-2.16602 - 0.20492I$	0
$u = -0.941754 - 0.219556I$ $a = -0.025305 + 0.709280I$ $b = -0.178765 + 0.810853I$	$-2.16602 + 0.20492I$	0
$u = 0.940973 + 0.207439I$ $a = -0.412169 - 0.864761I$ $b = 0.134714 + 0.091228I$	$-1.11111 - 3.85397I$	0
$u = 0.940973 - 0.207439I$ $a = -0.412169 + 0.864761I$ $b = 0.134714 - 0.091228I$	$-1.11111 + 3.85397I$	0
$u = -0.863468 + 0.605766I$ $a = -0.53716 - 1.54890I$ $b = -0.143737 + 0.286338I$	$-1.99505 + 2.37644I$	0
$u = -0.863468 - 0.605766I$ $a = -0.53716 + 1.54890I$ $b = -0.143737 - 0.286338I$	$-1.99505 - 2.37644I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.044054 + 0.934433I$ $a = 0.31012 - 1.59875I$ $b = -0.190225 + 1.262710I$	$5.99163 + 0.69082I$	0
$u = 0.044054 - 0.934433I$ $a = 0.31012 + 1.59875I$ $b = -0.190225 - 1.262710I$	$5.99163 - 0.69082I$	0
$u = 1.031220 + 0.271964I$ $a = 0.736351 - 0.470261I$ $b = 1.069580 + 0.094826I$	$-3.56831 - 8.16461I$	0
$u = 1.031220 - 0.271964I$ $a = 0.736351 + 0.470261I$ $b = 1.069580 - 0.094826I$	$-3.56831 + 8.16461I$	0
$u = 0.767651 + 0.757434I$ $a = 0.837821 - 1.017100I$ $b = -0.449209 + 1.189530I$	$3.52869 - 1.51153I$	0
$u = 0.767651 - 0.757434I$ $a = 0.837821 + 1.017100I$ $b = -0.449209 - 1.189530I$	$3.52869 + 1.51153I$	0
$u = -1.048300 + 0.280427I$ $a = 0.489018 + 0.912292I$ $b = 0.799574 - 0.225351I$	$-3.52326 - 1.68443I$	0
$u = -1.048300 - 0.280427I$ $a = 0.489018 - 0.912292I$ $b = 0.799574 + 0.225351I$	$-3.52326 + 1.68443I$	0
$u = 0.903272 + 0.118602I$ $a = -1.60202 - 0.03005I$ $b = -0.600373 + 0.032922I$	$-4.33624 - 1.85376I$	0
$u = 0.903272 - 0.118602I$ $a = -1.60202 + 0.03005I$ $b = -0.600373 - 0.032922I$	$-4.33624 + 1.85376I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.792156 + 0.435165I$ $a = -1.65607 + 2.09988I$ $b = -0.175636 - 0.756757I$	$-2.71989 - 1.74275I$	0
$u = 0.792156 - 0.435165I$ $a = -1.65607 - 2.09988I$ $b = -0.175636 + 0.756757I$	$-2.71989 + 1.74275I$	0
$u = -0.825296 + 0.723783I$ $a = -0.089038 - 0.126982I$ $b = 0.743422 + 0.214389I$	$0.793418 - 0.342688I$	0
$u = -0.825296 - 0.723783I$ $a = -0.089038 + 0.126982I$ $b = 0.743422 - 0.214389I$	$0.793418 + 0.342688I$	0
$u = -0.858541 + 0.271602I$ $a = -1.163190 - 0.673148I$ $b = -0.580498 - 0.464868I$	$-3.28567 + 2.08006I$	0
$u = -0.858541 - 0.271602I$ $a = -1.163190 + 0.673148I$ $b = -0.580498 + 0.464868I$	$-3.28567 - 2.08006I$	0
$u = -0.134991 + 0.888141I$ $a = 0.25129 + 1.77515I$ $b = -0.357477 - 1.330400I$	$4.26779 - 9.16492I$	0
$u = -0.134991 - 0.888141I$ $a = 0.25129 - 1.77515I$ $b = -0.357477 + 1.330400I$	$4.26779 + 9.16492I$	0
$u = 0.783348 + 0.793417I$ $a = 0.31023 + 1.89747I$ $b = 0.305647 - 1.367590I$	$5.76218 + 4.13295I$	0
$u = 0.783348 - 0.793417I$ $a = 0.31023 - 1.89747I$ $b = 0.305647 + 1.367590I$	$5.76218 - 4.13295I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.014490 + 0.485433I$ $a = 0.949019 + 0.007823I$ $b = -0.116971 + 1.237110I$	$1.28199 - 1.11458I$	0
$u = 1.014490 - 0.485433I$ $a = 0.949019 - 0.007823I$ $b = -0.116971 - 1.237110I$	$1.28199 + 1.11458I$	0
$u = -0.854806 + 0.147106I$ $a = 0.547401 + 0.129923I$ $b = 0.917788 + 0.231374I$	$-0.908809 + 0.305522I$	0
$u = -0.854806 - 0.147106I$ $a = 0.547401 - 0.129923I$ $b = 0.917788 - 0.231374I$	$-0.908809 - 0.305522I$	0
$u = -0.770784 + 0.848693I$ $a = 0.910958 - 0.051963I$ $b = -1.154470 - 0.413991I$	$3.77773 - 7.09884I$	0
$u = -0.770784 - 0.848693I$ $a = 0.910958 + 0.051963I$ $b = -1.154470 + 0.413991I$	$3.77773 + 7.09884I$	0
$u = -0.797556 + 0.823599I$ $a = 0.579961 + 0.247193I$ $b = 0.252758 + 0.230091I$	$5.51943 - 2.25201I$	0
$u = -0.797556 - 0.823599I$ $a = 0.579961 - 0.247193I$ $b = 0.252758 - 0.230091I$	$5.51943 + 2.25201I$	0
$u = 0.841177 + 0.781346I$ $a = 1.30765 + 1.50353I$ $b = -1.89413 - 0.02612I$	$4.69793 - 1.89404I$	0
$u = 0.841177 - 0.781346I$ $a = 1.30765 - 1.50353I$ $b = -1.89413 + 0.02612I$	$4.69793 + 1.89404I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.776839 + 0.315662I$ $a = -2.31996 - 0.26698I$ $b = -0.518726 - 1.230210I$	$3.21725 - 6.68543I$	0
$u = 0.776839 - 0.315662I$ $a = -2.31996 + 0.26698I$ $b = -0.518726 + 1.230210I$	$3.21725 + 6.68543I$	0
$u = -1.108480 + 0.379247I$ $a = 1.39398 + 0.66074I$ $b = 0.47049 - 1.35310I$	$0.94968 + 13.54130I$	0
$u = -1.108480 - 0.379247I$ $a = 1.39398 - 0.66074I$ $b = 0.47049 + 1.35310I$	$0.94968 - 13.54130I$	0
$u = -0.918989 + 0.727834I$ $a = -0.313528 - 1.052260I$ $b = -0.797138 + 0.136335I$	$0.50881 + 5.89286I$	0
$u = -0.918989 - 0.727834I$ $a = -0.313528 + 1.052260I$ $b = -0.797138 - 0.136335I$	$0.50881 - 5.89286I$	0
$u = 0.845638 + 0.824503I$ $a = 0.086670 - 0.647207I$ $b = 0.845652 + 0.355743I$	$3.37975 - 0.59723I$	0
$u = 0.845638 - 0.824503I$ $a = 0.086670 + 0.647207I$ $b = 0.845652 - 0.355743I$	$3.37975 + 0.59723I$	0
$u = -0.812113 + 0.858736I$ $a = 0.26423 - 1.53413I$ $b = 0.366298 + 1.160600I$	$5.96641 - 3.88382I$	0
$u = -0.812113 - 0.858736I$ $a = 0.26423 + 1.53413I$ $b = 0.366298 - 1.160600I$	$5.96641 + 3.88382I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.887135 + 0.784212I$ $a = -1.42560 + 2.68074I$ $b = -0.02986 - 1.99304I$	$6.05045 - 2.95075I$	0
$u = 0.887135 - 0.784212I$ $a = -1.42560 - 2.68074I$ $b = -0.02986 + 1.99304I$	$6.05045 + 2.95075I$	0
$u = 0.821998 + 0.870740I$ $a = 0.452658 - 0.502702I$ $b = -0.041717 + 0.197614I$	$4.46893 - 2.84022I$	0
$u = 0.821998 - 0.870740I$ $a = 0.452658 + 0.502702I$ $b = -0.041717 - 0.197614I$	$4.46893 + 2.84022I$	0
$u = 0.888684 + 0.802898I$ $a = -0.48522 - 2.41345I$ $b = -0.037240 + 1.261580I$	$8.53887 - 7.30535I$	0
$u = 0.888684 - 0.802898I$ $a = -0.48522 + 2.41345I$ $b = -0.037240 - 1.261580I$	$8.53887 + 7.30535I$	0
$u = 0.745900 + 0.937975I$ $a = 0.02739 + 1.68294I$ $b = 0.098701 - 1.342070I$	$10.53650 + 3.58708I$	0
$u = 0.745900 - 0.937975I$ $a = 0.02739 - 1.68294I$ $b = 0.098701 + 1.342070I$	$10.53650 - 3.58708I$	0
$u = 0.924928 + 0.763547I$ $a = -1.18150 - 0.98306I$ $b = 1.76866 - 0.16182I$	$4.43925 - 3.93588I$	0
$u = 0.924928 - 0.763547I$ $a = -1.18150 + 0.98306I$ $b = 1.76866 + 0.16182I$	$4.43925 + 3.93588I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.866506 + 0.829319I$ $a = -0.65168 - 1.65528I$ $b = 0.55842 + 1.52847I$	$9.91603 - 3.24616I$	0
$u = -0.866506 - 0.829319I$ $a = -0.65168 + 1.65528I$ $b = 0.55842 - 1.52847I$	$9.91603 + 3.24616I$	0
$u = 0.895308 + 0.802002I$ $a = 2.26505 - 2.19717I$ $b = 0.055551 + 1.218550I$	$8.51913 + 1.29090I$	0
$u = 0.895308 - 0.802002I$ $a = 2.26505 + 2.19717I$ $b = 0.055551 - 1.218550I$	$8.51913 - 1.29090I$	0
$u = -0.775321 + 0.924411I$ $a = 0.54239 + 1.86817I$ $b = -0.42932 - 1.51031I$	$11.26430 - 4.52932I$	0
$u = -0.775321 - 0.924411I$ $a = 0.54239 - 1.86817I$ $b = -0.42932 + 1.51031I$	$11.26430 + 4.52932I$	0
$u = 1.133300 + 0.414980I$ $a = 0.942047 - 0.685512I$ $b = 0.446705 + 1.211880I$	$2.34201 - 5.30896I$	0
$u = 1.133300 - 0.414980I$ $a = 0.942047 + 0.685512I$ $b = 0.446705 - 1.211880I$	$2.34201 + 5.30896I$	0
$u = 0.775455 + 0.926255I$ $a = 0.34167 - 1.93070I$ $b = -0.45197 + 1.49777I$	$9.7299 + 12.7355I$	0
$u = 0.775455 - 0.926255I$ $a = 0.34167 + 1.93070I$ $b = -0.45197 - 1.49777I$	$9.7299 - 12.7355I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.207490 + 0.107051I$ $a = -0.0860143 - 0.0229712I$ $b = 0.329549 - 1.154850I$	$-0.69332 + 5.77522I$	0
$u = 1.207490 - 0.107051I$ $a = -0.0860143 + 0.0229712I$ $b = 0.329549 + 1.154850I$	$-0.69332 - 5.77522I$	0
$u = 0.641995 + 0.454168I$ $a = 1.33017 - 1.83840I$ $b = 0.055512 + 1.316010I$	$2.86300 - 1.76850I$	0
$u = 0.641995 - 0.454168I$ $a = 1.33017 + 1.83840I$ $b = 0.055512 - 1.316010I$	$2.86300 + 1.76850I$	0
$u = 0.977549 + 0.725933I$ $a = 0.69773 - 1.39693I$ $b = 0.585794 + 1.031470I$	$2.88601 - 4.13889I$	0
$u = 0.977549 - 0.725933I$ $a = 0.69773 + 1.39693I$ $b = 0.585794 - 1.031470I$	$2.88601 + 4.13889I$	0
$u = -0.879267 + 0.842453I$ $a = 0.45459 + 2.03773I$ $b = -0.083174 - 1.404610I$	$9.83248 + 2.81267I$	0
$u = -0.879267 - 0.842453I$ $a = 0.45459 - 2.03773I$ $b = -0.083174 + 1.404610I$	$9.83248 - 2.81267I$	0
$u = 0.967901 + 0.753551I$ $a = -2.07407 + 1.82010I$ $b = -0.335530 - 1.351480I$	$5.19767 - 9.96965I$	0
$u = 0.967901 - 0.753551I$ $a = -2.07407 - 1.82010I$ $b = -0.335530 + 1.351480I$	$5.19767 + 9.96965I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.924896 + 0.809484I$ $a = -1.33981 - 2.19463I$ $b = -0.60712 + 1.50546I$	$9.73380 + 9.36403I$	0
$u = -0.924896 - 0.809484I$ $a = -1.33981 + 2.19463I$ $b = -0.60712 - 1.50546I$	$9.73380 - 9.36403I$	0
$u = 0.938416 + 0.796157I$ $a = 0.277742 + 0.435214I$ $b = -0.842344 + 0.407957I$	$3.09214 - 5.46479I$	0
$u = 0.938416 - 0.796157I$ $a = 0.277742 - 0.435214I$ $b = -0.842344 - 0.407957I$	$3.09214 + 5.46479I$	0
$u = -1.184960 + 0.336978I$ $a = -0.921879 - 0.193712I$ $b = 0.021539 + 1.165930I$	$1.81716 + 3.63422I$	0
$u = -1.184960 - 0.336978I$ $a = -0.921879 + 0.193712I$ $b = 0.021539 - 1.165930I$	$1.81716 - 3.63422I$	0
$u = -0.903926 + 0.840111I$ $a = 0.89528 + 2.49087I$ $b = 0.012218 - 1.395300I$	$9.80247 + 3.12417I$	0
$u = -0.903926 - 0.840111I$ $a = 0.89528 - 2.49087I$ $b = 0.012218 + 1.395300I$	$9.80247 - 3.12417I$	0
$u = -0.920227 + 0.826201I$ $a = 1.33453 + 2.06889I$ $b = 0.118281 - 1.366350I$	$9.70356 + 3.39585I$	0
$u = -0.920227 - 0.826201I$ $a = 1.33453 - 2.06889I$ $b = 0.118281 + 1.366350I$	$9.70356 - 3.39585I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.967713 + 0.772824I$ $a = -0.716927 + 0.019216I$ $b = -0.290002 + 0.128858I$	$4.99382 + 8.23429I$	0
$u = -0.967713 - 0.772824I$ $a = -0.716927 - 0.019216I$ $b = -0.290002 - 0.128858I$	$4.99382 - 8.23429I$	0
$u = -0.724507 + 0.234472I$ $a = 3.49443 - 1.28127I$ $b = -0.162636 - 1.071360I$	$2.77776 - 3.54770I$	0
$u = -0.724507 - 0.234472I$ $a = 3.49443 + 1.28127I$ $b = -0.162636 + 1.071360I$	$2.77776 + 3.54770I$	0
$u = 0.643325 + 0.402813I$ $a = 2.31112 - 1.18492I$ $b = -0.137169 + 1.144930I$	$2.84284 - 1.56897I$	0
$u = 0.643325 - 0.402813I$ $a = 2.31112 + 1.18492I$ $b = -0.137169 - 1.144930I$	$2.84284 + 1.56897I$	0
$u = 0.957501 + 0.811951I$ $a = 0.006918 - 0.363408I$ $b = -0.091790 + 0.313940I$	$4.04923 - 3.39882I$	0
$u = 0.957501 - 0.811951I$ $a = 0.006918 + 0.363408I$ $b = -0.091790 - 0.313940I$	$4.04923 + 3.39882I$	0
$u = -0.990628 + 0.777226I$ $a = -0.172869 + 1.343180I$ $b = 1.228930 - 0.368111I$	$3.10114 + 13.16380I$	0
$u = -0.990628 - 0.777226I$ $a = -0.172869 - 1.343180I$ $b = 1.228930 + 0.368111I$	$3.10114 - 13.16380I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.974807 + 0.800519I$ $a = -1.72991 - 1.71508I$ $b = -0.393973 + 1.144830I$	$5.45956 + 10.05950I$	0
$u = -0.974807 - 0.800519I$ $a = -1.72991 + 1.71508I$ $b = -0.393973 - 1.144830I$	$5.45956 - 10.05950I$	0
$u = -0.719207 + 0.122164I$ $a = -1.84817 + 0.29714I$ $b = -0.13089 + 1.74673I$	$0.988939 + 0.543297I$	0
$u = -0.719207 - 0.122164I$ $a = -1.84817 - 0.29714I$ $b = -0.13089 - 1.74673I$	$0.988939 - 0.543297I$	0
$u = -1.023520 + 0.813170I$ $a = 1.26975 + 2.03774I$ $b = 0.48551 - 1.52381I$	$10.4789 + 10.9316I$	0
$u = -1.023520 - 0.813170I$ $a = 1.26975 - 2.03774I$ $b = 0.48551 + 1.52381I$	$10.4789 - 10.9316I$	0
$u = 1.025740 + 0.813083I$ $a = 1.46781 - 2.08551I$ $b = 0.48468 + 1.50480I$	$8.9358 - 19.1450I$	0
$u = 1.025740 - 0.813083I$ $a = 1.46781 + 2.08551I$ $b = 0.48468 - 1.50480I$	$8.9358 + 19.1450I$	0
$u = -0.018514 + 0.687643I$ $a = 0.816715 + 0.382091I$ $b = -0.789110 + 0.112428I$	$-0.24353 + 4.99657I$	0
$u = -0.018514 - 0.687643I$ $a = 0.816715 - 0.382091I$ $b = -0.789110 - 0.112428I$	$-0.24353 - 4.99657I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.044260 + 0.804732I$ $a = -1.49296 + 1.44075I$ $b = -0.148581 - 1.320310I$	$9.59496 - 9.99746I$	0
$u = 1.044260 - 0.804732I$ $a = -1.49296 - 1.44075I$ $b = -0.148581 + 1.320310I$	$9.59496 + 9.99746I$	0
$u = -0.681630$ $a = -4.00479$ $b = -3.21026$	0.719139	-775.980
$u = -0.656424 + 0.170772I$ $a = 0.26167 + 3.49264I$ $b = 0.158738 - 1.299710I$	$3.10576 + 5.32366I$	0
$u = -0.656424 - 0.170772I$ $a = 0.26167 - 3.49264I$ $b = 0.158738 + 1.299710I$	$3.10576 - 5.32366I$	0
$u = 0.284445 + 0.612127I$ $a = 0.40095 - 1.51057I$ $b = 0.173496 + 1.327890I$	$3.33859 - 3.00489I$	0
$u = 0.284445 - 0.612127I$ $a = 0.40095 + 1.51057I$ $b = 0.173496 - 1.327890I$	$3.33859 + 3.00489I$	0
$u = -0.763357 + 1.117130I$ $a = -0.13817 - 1.62766I$ $b = -0.066541 + 1.218260I$	$7.62789 + 3.46578I$	0
$u = -0.763357 - 1.117130I$ $a = -0.13817 + 1.62766I$ $b = -0.066541 - 1.218260I$	$7.62789 - 3.46578I$	0
$u = -0.638214$ $a = 0.558775$ $b = 0.551963$	-0.993846	-10.4150

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.047110 + 0.920673I$ $a = -0.87098 - 1.62332I$ $b = -0.028927 + 1.199400I$	$6.76857 + 3.80673I$	0
$u = -1.047110 - 0.920673I$ $a = -0.87098 + 1.62332I$ $b = -0.028927 - 1.199400I$	$6.76857 - 3.80673I$	0
$u = 0.124573 + 0.585779I$ $a = 0.51931 + 1.32308I$ $b = 0.189100 - 1.049600I$	$0.99196 + 2.53913I$	$-6.00000 - 4.37216I$
$u = 0.124573 - 0.585779I$ $a = 0.51931 - 1.32308I$ $b = 0.189100 + 1.049600I$	$0.99196 - 2.53913I$	$-6.00000 + 4.37216I$
$u = 0.472372 + 0.367480I$ $a = -0.043926 + 0.971105I$ $b = 0.331246 - 1.369500I$	$4.14193 + 3.94885I$	0
$u = 0.472372 - 0.367480I$ $a = -0.043926 - 0.971105I$ $b = 0.331246 + 1.369500I$	$4.14193 - 3.94885I$	0
$u = 0.054560 + 0.437689I$ $a = 1.52948 - 0.70992I$ $b = -0.410200 - 0.345519I$	$1.45413 + 1.51736I$	$0.81801 - 1.31210I$
$u = 0.054560 - 0.437689I$ $a = 1.52948 + 0.70992I$ $b = -0.410200 + 0.345519I$	$1.45413 - 1.51736I$	$0.81801 + 1.31210I$
$u = -0.172115 + 0.383429I$ $a = 0.643553 + 0.174367I$ $b = 0.579711 - 0.185545I$	$-1.46801 + 0.44199I$	$-7.72976 - 1.36498I$
$u = -0.172115 - 0.383429I$ $a = 0.643553 - 0.174367I$ $b = 0.579711 + 0.185545I$	$-1.46801 - 0.44199I$	$-7.72976 + 1.36498I$

$$\langle -13u^{20} - 15u^{19} + \dots + b + 14, 19u^{20} + 35u^{19} + \dots + a - 59, u^{21} + u^{20} + \dots - u + 1 \rangle$$

II. $I_2^u =$

(i) Arc colorings

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

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

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

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

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

$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -19u^{20} - 35u^{19} + \dots + 41u + 59 \\ 13u^{20} + 15u^{19} + \dots - 32u - 14 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -30u^{20} - 30u^{19} + \dots + 77u + 14 \\ -14u^{20} - 10u^{19} + \dots + 48u - 4 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 54u^{20} + 35u^{19} + \dots - 172u + 25 \\ 28u^{20} + 4u^{19} + \dots - 110u + 55 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -10u^{20} - 22u^{19} + \dots + 20u + 41 \\ 13u^{20} + 15u^{19} + \dots - 32u - 14 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -27u^{20} - 22u^{19} + \dots + 83u + 2 \\ -u^{20} + 12u^{19} + \dots + 19u - 38 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -10u^{20} - 21u^{19} + \dots + 21u + 38 \\ 15u^{20} + 19u^{19} + \dots - 36u - 21 \end{pmatrix}$$

(ii) Obstruction class = 1

$$\begin{aligned} \text{(iii) Cusp Shapes} = & 649u^{20} + 235u^{19} - 2070u^{18} - 1900u^{17} + 6328u^{16} + 5578u^{15} - \\ & 11785u^{14} - 13547u^{13} + 18689u^{12} + 21711u^{11} - 22496u^{10} - 28594u^9 + 22369u^8 + \\ & 27727u^7 - 16761u^6 - 20367u^5 + 10303u^4 + 9977u^3 - 3757u^2 - 2328u + 873 \end{aligned}$$

(iv) u -Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{21} - 7u^{20} + \dots + 17u - 1$
c_2	$u^{21} - u^{20} + \dots - u - 1$
c_3	$u^{21} - 3u^{20} + \dots - 4u - 1$
c_4	$u^{21} + 2u^{19} + \dots + 5u - 1$
c_5	$u^{21} - 3u^{20} + \dots - 8u - 2$
c_6	$u^{21} + u^{20} + \dots - u + 1$
c_7	$u^{21} + 7u^{20} + \dots + 17u + 1$
c_8	$u^{21} + 4u^{20} + \dots + 14u - 1$
c_9	$u^{21} - 3u^{20} + \dots - 6u + 2$
c_{10}	$u^{21} + 8u^{20} + \dots + 31u^2 - 1$
c_{11}	$u^{21} + 3u^{20} + \dots - 8u + 2$
c_{12}	$u^{21} + 3u^{20} + \dots - 2u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{21} + 21y^{20} + \dots + 37y - 1$
c_2, c_6	$y^{21} - 7y^{20} + \dots + 17y - 1$
c_3	$y^{21} - 15y^{20} + \dots - 8y - 1$
c_4	$y^{21} + 4y^{20} + \dots - 15y - 1$
c_5, c_{11}	$y^{21} + 7y^{20} + \dots - 76y - 4$
c_8	$y^{21} - 10y^{20} + \dots + 104y - 1$
c_9	$y^{21} - 3y^{20} + \dots + 48y - 4$
c_{10}	$y^{21} + 16y^{20} + \dots + 62y - 1$
c_{12}	$y^{21} - y^{20} + \dots - 14y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.915720 + 0.427894I$ $a = 0.755059 - 0.078753I$ $b = -0.110217 - 1.262770I$	$1.10096 + 1.71022I$	$-9.08478 - 6.72830I$
$u = -0.915720 - 0.427894I$ $a = 0.755059 + 0.078753I$ $b = -0.110217 + 1.262770I$	$1.10096 - 1.71022I$	$-9.08478 + 6.72830I$
$u = 0.848362 + 0.596405I$ $a = -0.92300 + 1.71059I$ $b = -0.063339 - 0.591717I$	$-1.56401 - 2.35386I$	$2.03345 + 3.84287I$
$u = 0.848362 - 0.596405I$ $a = -0.92300 - 1.71059I$ $b = -0.063339 + 0.591717I$	$-1.56401 + 2.35386I$	$2.03345 - 3.84287I$
$u = 1.068570 + 0.156991I$ $a = -0.798437 - 0.546223I$ $b = -0.253876 - 1.148320I$	$0.61142 - 5.23333I$	$-4.34550 + 7.92167I$
$u = 1.068570 - 0.156991I$ $a = -0.798437 + 0.546223I$ $b = -0.253876 + 1.148320I$	$0.61142 + 5.23333I$	$-4.34550 - 7.92167I$
$u = 0.791255 + 0.791497I$ $a = -1.192410 - 0.063616I$ $b = 1.056430 - 0.673783I$	$4.32427 - 1.75661I$	$-2.51202 + 6.94256I$
$u = 0.791255 - 0.791497I$ $a = -1.192410 + 0.063616I$ $b = 1.056430 + 0.673783I$	$4.32427 + 1.75661I$	$-2.51202 - 6.94256I$
$u = -0.800520 + 0.821514I$ $a = 0.352568 - 1.294620I$ $b = 0.351082 + 1.231830I$	$7.10267 - 4.16826I$	$1.76200 + 4.94625I$
$u = -0.800520 - 0.821514I$ $a = 0.352568 + 1.294620I$ $b = 0.351082 - 1.231830I$	$7.10267 + 4.16826I$	$1.76200 - 4.94625I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.775998 + 0.245611I$ $a = -1.51610 - 1.14279I$ $b = -0.174017 - 0.277046I$	$-3.38301 + 1.03585I$	$-14.0632 + 2.0069I$
$u = -0.775998 - 0.245611I$ $a = -1.51610 + 1.14279I$ $b = -0.174017 + 0.277046I$	$-3.38301 - 1.03585I$	$-14.0632 - 2.0069I$
$u = -0.971001 + 0.773987I$ $a = -1.85433 - 1.41027I$ $b = -0.366557 + 1.205620I$	$6.57530 + 10.15420I$	$0.64790 - 9.81133I$
$u = -0.971001 - 0.773987I$ $a = -1.85433 + 1.41027I$ $b = -0.366557 - 1.205620I$	$6.57530 - 10.15420I$	$0.64790 + 9.81133I$
$u = 0.983375 + 0.777314I$ $a = -0.057774 + 1.027000I$ $b = -0.740809 - 0.479521I$	$3.72911 - 4.15565I$	$-2.21704 + 4.21777I$
$u = 0.983375 - 0.777314I$ $a = -0.057774 - 1.027000I$ $b = -0.740809 + 0.479521I$	$3.72911 + 4.15565I$	$-2.21704 - 4.21777I$
$u = -0.675645$ $a = 3.84735$ $b = 2.99777$	0.725137	565.730
$u = -0.876090 + 1.040190I$ $a = 0.33865 + 1.74242I$ $b = 0.056777 - 1.219150I$	$7.44988 + 3.70761I$	$0.57273 - 13.92750I$
$u = -0.876090 - 1.040190I$ $a = 0.33865 - 1.74242I$ $b = 0.056777 + 1.219150I$	$7.44988 - 3.70761I$	$0.57273 + 13.92750I$
$u = 0.485587 + 0.016312I$ $a = 2.47210 - 3.34317I$ $b = 0.245635 + 1.268450I$	$3.29965 - 4.70006I$	$-3.15757 + 3.07340I$

	Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.485587 - 0.016312I$		
$a =$	$2.47210 + 3.34317I$	$3.29965 + 4.70006I$	$-3.15757 - 3.07340I$
$b =$	$0.245635 - 1.268450I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{21} - 7u^{20} + \dots + 17u - 1)(u^{130} + 36u^{129} + \dots + 5212u + 361)$
c_2	$(u^{21} - u^{20} + \dots - u - 1)(u^{130} - 18u^{128} + \dots + 24u + 19)$
c_3	$(u^{21} - 3u^{20} + \dots - 4u - 1)(u^{130} - 2u^{129} + \dots + 3935u - 631)$
c_4	$(u^{21} + 2u^{19} + \dots + 5u - 1)(u^{130} + 3u^{129} + \dots + 1170u - 47)$
c_5	$(u^{21} - 3u^{20} + \dots - 8u - 2)(u^{130} - 2u^{129} + \dots - 142u - 118)$
c_6	$(u^{21} + u^{20} + \dots - u + 1)(u^{130} - 18u^{128} + \dots + 24u + 19)$
c_7	$(u^{21} + 7u^{20} + \dots + 17u + 1)(u^{130} + 36u^{129} + \dots + 5212u + 361)$
c_8	$(u^{21} + 4u^{20} + \dots + 14u - 1)(u^{130} - u^{129} + \dots - 21u + 1)$
c_9	$(u^{21} - 3u^{20} + \dots - 6u + 2)(u^{130} - 4u^{129} + \dots - 29836u - 4154)$
c_{10}	$(u^{21} + 8u^{20} + \dots + 31u^2 - 1)$ $\cdot (u^{130} + u^{129} + \dots + 15754265u + 1219943)$
c_{11}	$(u^{21} + 3u^{20} + \dots - 8u + 2)(u^{130} - 2u^{129} + \dots - 142u - 118)$
c_{12}	$(u^{21} + 3u^{20} + \dots - 2u + 1)(u^{130} + 4u^{129} + \dots - 253u - 29)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^{21} + 21y^{20} + \dots + 37y - 1)$ $\cdot (y^{130} + 124y^{129} + \dots - 5800964y + 130321)$
c_2, c_6	$(y^{21} - 7y^{20} + \dots + 17y - 1)(y^{130} - 36y^{129} + \dots - 5212y + 361)$
c_3	$(y^{21} - 15y^{20} + \dots - 8y - 1)$ $\cdot (y^{130} - 28y^{129} + \dots - 8496531y + 398161)$
c_4	$(y^{21} + 4y^{20} + \dots - 15y - 1)(y^{130} + 35y^{129} + \dots + 573328y + 2209)$
c_5, c_{11}	$(y^{21} + 7y^{20} + \dots - 76y - 4)(y^{130} + 94y^{129} + \dots + 551900y + 13924)$
c_8	$(y^{21} - 10y^{20} + \dots + 104y - 1)(y^{130} - 3y^{129} + \dots - 123y + 1)$
c_9	$(y^{21} - 3y^{20} + \dots + 48y - 4)$ $\cdot (y^{130} - 36y^{129} + \dots - 1371735192y + 17255716)$
c_{10}	$(y^{21} + 16y^{20} + \dots + 62y - 1)$ $\cdot (y^{130} + 59y^{129} + \dots - 175337048515489y + 1488260923249)$
c_{12}	$(y^{21} - y^{20} + \dots - 14y - 1)(y^{130} + 10y^{129} + \dots + 55007y + 841)$