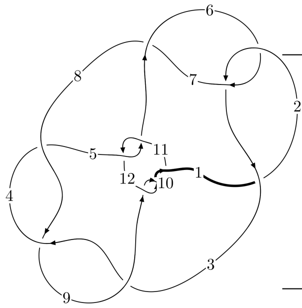
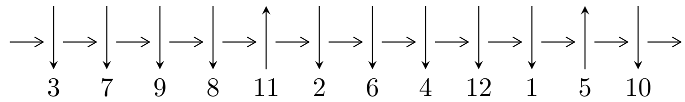
$12a_{0556}$ $(K12a_{0556})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.07057 \times 10^{77} u^{84} - 1.50389 \times 10^{77} u^{83} + \cdots + 2.53839 \times 10^{77} b + 9.88146 \times 10^{77},$$
$$4.68186 \times 10^{77} u^{84} - 4.98399 \times 10^{77} u^{83} + \cdots + 7.61518 \times 10^{77} a + 1.56488 \times 10^{78},\ u^{85} - 2u^{84} + \cdots + 3u - 9$$
$$I_2^u = \langle b,\ u^4 - u^2 + a - 2u + 1,\ u^5 + u^4 - u^2 + u + 1 \rangle$$
$$I_3^u = \langle -u^3 a - u^2 a + 2u^3 + au - u^2 + 2b - u + 1,\ -2u^3 a + u^2 a + 3u^3 + a^2 + au - u^2 - a - 2u,\ u^4 - u^2 + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 98 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.

$\boldsymbol{I_1^u = \langle 1.07\times 10^{77}u^{84} - 1.50\times 10^{77}u^{83} + \cdots + 2.54\times 10^{77}b + 9.88\times 10^{77},\ 4.68\times 10^{77}u^{84} - 4.98\times 10^{77}u^{83} + \cdots + 7.62\times 10^{77}a + 1.56\times 10^{78},\ u^{85} - 2u^{84} + \cdots + 3u - 9\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.614806u^{84} + 0.654481u^{83} + \cdots + 9.36540u - 2.05495 \\ -0.421753u^{84} + 0.592456u^{83} + \cdots - 1.27756u - 3.89280 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.681235u^{84} - 0.376546u^{83} + \cdots - 7.23243u + 7.03410 \\ -0.191650u^{84} - 0.675652u^{83} + \cdots + 8.48193u + 7.43904 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1.86822u^{84} - 0.943208u^{83} + \cdots - 12.5547u + 7.89357 \\ -0.0907235u^{84} - 1.88072u^{83} + \cdots + 17.6608u + 14.6758 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1.63065u^{84} - 3.35202u^{83} + \cdots + 13.0436u + 22.5528 \\ -2.79323u^{84} + 3.46800u^{83} + \cdots - 2.28892u - 16.8140 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.699998u^{84} - 1.53125u^{83} + \cdots + 14.4778u + 10.2525 \\ -1.30758u^{84} + 1.53849u^{83} + \cdots - 1.30083u - 10.6368 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1.80393u^{84} + 3.41357u^{83} + \cdots - 3.48625u - 22.2978 \\ 3.09725u^{84} - 3.65415u^{83} + \cdots + 0.275477u + 18.2000 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.269673u^{84} - 0.693788u^{83} + \cdots + 4.57663u - 2.13190$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{85} + 28u^{84} + \cdots + 1107u + 81$
c_2, c_6	$u^{85} - 2u^{84} + \cdots + 3u - 9$
c_3, c_4, c_8	$u^{85} - 2u^{84} + \cdots + 144u - 36$
c_5, c_{11}	$u^{85} + u^{84} + \cdots - 96u - 32$
c_9, c_{10}, c_{12}	$u^{85} - 10u^{84} + \cdots + 17u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$y^{85} + 64y^{84} + \cdots + 485595y - 6561$
c_2, c_6	$y^{85} - 28y^{84} + \cdots + 1107y - 81$
c_3, c_4, c_8	$y^{85} + 80y^{84} + \cdots + 16776y - 1296$
c_5, c_{11}	$y^{85} + 45y^{84} + \cdots + 22016y - 1024$
c_9, c_{10}, c_{12}	$y^{85} - 80y^{84} + \cdots - 91y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.998621$ $a = -0.294335$ $b = 1.06804$	-5.84228	-16.3890
$u = -0.806816 + 0.599615I$ $a = 0.703510 + 0.591628I$ $b = -0.319657 + 0.693146I$	$-0.43718 + 2.02855I$	0
$u = -0.806816 - 0.599615I$ $a = 0.703510 - 0.591628I$ $b = -0.319657 - 0.693146I$	$-0.43718 - 2.02855I$	0
$u = 0.984839 + 0.081448I$ $a = 0.48248 + 1.60444I$ $b = -0.198977 + 1.034500I$	$-3.82226 - 2.23236I$	$-15.8479 + 4.6950I$
$u = 0.984839 - 0.081448I$ $a = 0.48248 - 1.60444I$ $b = -0.198977 - 1.034500I$	$-3.82226 + 2.23236I$	$-15.8479 - 4.6950I$
$u = 1.016480 + 0.146739I$ $a = 0.131558 - 0.758826I$ $b = -1.033670 - 0.298635I$	$-2.02964 - 3.37819I$	0
$u = 1.016480 - 0.146739I$ $a = 0.131558 + 0.758826I$ $b = -1.033670 + 0.298635I$	$-2.02964 + 3.37819I$	0
$u = 0.709986 + 0.663321I$ $a = 2.20996 + 0.27167I$ $b = -0.850401 + 0.427141I$	$-1.108310 + 0.109986I$	$-8.00000 + 0.I$
$u = 0.709986 - 0.663321I$ $a = 2.20996 - 0.27167I$ $b = -0.850401 - 0.427141I$	$-1.108310 - 0.109986I$	$-8.00000 + 0.I$
$u = -0.900145 + 0.529083I$ $a = 5.92919 - 1.06315I$ $b = -0.309938 + 0.046527I$	$-0.08293 + 2.04372I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.900145 - 0.529083I$ $a = 5.92919 + 1.06315I$ $b = -0.309938 - 0.046527I$	$-0.08293 - 2.04372I$	0
$u = -0.724002 + 0.754097I$ $a = -0.922405 + 0.673843I$ $b = 0.555009 - 0.921380I$	$1.77796 - 1.79805I$	0
$u = -0.724002 - 0.754097I$ $a = -0.922405 - 0.673843I$ $b = 0.555009 + 0.921380I$	$1.77796 + 1.79805I$	0
$u = 0.775319 + 0.522980I$ $a = -0.458774 + 0.800072I$ $b = 0.235131 - 0.116553I$	$1.78078 - 2.10361I$	$0. + 4.46892I$
$u = 0.775319 - 0.522980I$ $a = -0.458774 - 0.800072I$ $b = 0.235131 + 0.116553I$	$1.78078 + 2.10361I$	$0. - 4.46892I$
$u = 0.268293 + 0.888731I$ $a = -0.732829 + 0.719131I$ $b = 0.581673 - 1.021050I$	$0.28979 - 6.12813I$	$-7.02703 + 5.51860I$
$u = 0.268293 - 0.888731I$ $a = -0.732829 - 0.719131I$ $b = 0.581673 + 1.021050I$	$0.28979 + 6.12813I$	$-7.02703 - 5.51860I$
$u = -0.711753 + 0.806285I$ $a = -1.84218 + 0.24993I$ $b = 1.26596 + 0.66556I$	$4.32861 - 2.99556I$	0
$u = -0.711753 - 0.806285I$ $a = -1.84218 - 0.24993I$ $b = 1.26596 - 0.66556I$	$4.32861 + 2.99556I$	0
$u = 0.867038 + 0.661822I$ $a = -1.308520 + 0.434436I$ $b = -0.06260 - 1.87617I$	$-5.78886 - 2.56710I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.867038 - 0.661822I$ $a = -1.308520 - 0.434436I$ $b = -0.06260 + 1.87617I$	$-5.78886 + 2.56710I$	0
$u = 0.759915 + 0.787119I$ $a = -0.139375 - 0.369733I$ $b = 0.543133 + 1.290540I$	$5.21127 - 0.29207I$	0
$u = 0.759915 - 0.787119I$ $a = -0.139375 + 0.369733I$ $b = 0.543133 - 1.290540I$	$5.21127 + 0.29207I$	0
$u = -0.674977 + 0.862853I$ $a = 0.848112 - 1.114180I$ $b = -0.606952 + 1.131660I$	$-3.29308 - 5.51174I$	0
$u = -0.674977 - 0.862853I$ $a = 0.848112 + 1.114180I$ $b = -0.606952 - 1.131660I$	$-3.29308 + 5.51174I$	0
$u = -0.996557 + 0.465595I$ $a = 1.127330 + 0.051322I$ $b = 0.09960 - 1.43805I$	$-8.63067 + 1.50287I$	0
$u = -0.996557 - 0.465595I$ $a = 1.127330 - 0.051322I$ $b = 0.09960 + 1.43805I$	$-8.63067 - 1.50287I$	0
$u = 0.693699 + 0.854594I$ $a = 0.694895 + 0.626975I$ $b = -0.729780 - 1.197990I$	$7.72360 + 5.45340I$	0
$u = 0.693699 - 0.854594I$ $a = 0.694895 - 0.626975I$ $b = -0.729780 + 1.197990I$	$7.72360 - 5.45340I$	0
$u = -0.873454 + 0.207048I$ $a = 1.70854 - 0.67125I$ $b = -0.20097 - 1.51805I$	$-8.29116 + 1.11793I$	$-14.9646 + 1.4167I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.873454 - 0.207048I$ $a = 1.70854 + 0.67125I$ $b = -0.20097 + 1.51805I$	$-8.29116 - 1.11793I$	$-14.9646 - 1.4167I$
$u = 0.631492 + 0.905031I$ $a = -0.944080 - 0.902830I$ $b = 0.83894 + 1.21192I$	$2.45406 + 10.41200I$	0
$u = 0.631492 - 0.905031I$ $a = -0.944080 + 0.902830I$ $b = 0.83894 - 1.21192I$	$2.45406 - 10.41200I$	0
$u = -0.886138 + 0.123069I$ $a = -0.92190 - 1.99206I$ $b = -0.053379 - 0.976140I$	$-0.667588 + 1.025160I$	$-12.54308 - 0.08033I$
$u = -0.886138 - 0.123069I$ $a = -0.92190 + 1.99206I$ $b = -0.053379 + 0.976140I$	$-0.667588 - 1.025160I$	$-12.54308 + 0.08033I$
$u = 0.850775 + 0.712293I$ $a = 0.798573 + 0.967990I$ $b = -0.612070 - 0.514601I$	$2.60791 - 2.73509I$	0
$u = 0.850775 - 0.712293I$ $a = 0.798573 - 0.967990I$ $b = -0.612070 + 0.514601I$	$2.60791 + 2.73509I$	0
$u = -1.093410 + 0.191489I$ $a = -0.21969 + 1.48130I$ $b = 0.482351 + 1.025410I$	$0.65643 + 5.42394I$	0
$u = -1.093410 - 0.191489I$ $a = -0.21969 - 1.48130I$ $b = 0.482351 - 1.025410I$	$0.65643 - 5.42394I$	0
$u = -0.922652 + 0.626826I$ $a = -1.48767 + 0.81968I$ $b = 0.235613 + 0.929059I$	$-0.82236 + 2.80542I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.922652 - 0.626826I$ $a = -1.48767 - 0.81968I$ $b = 0.235613 - 0.929059I$	$-0.82236 - 2.80542I$	0
$u = 1.105020 + 0.170837I$ $a = -0.762252 - 0.928102I$ $b = 0.412640 - 1.334080I$	$-10.32480 - 5.23736I$	0
$u = 1.105020 - 0.170837I$ $a = -0.762252 + 0.928102I$ $b = 0.412640 + 1.334080I$	$-10.32480 + 5.23736I$	0
$u = 1.034710 + 0.424655I$ $a = 0.678821 + 0.419020I$ $b = 0.453832 + 0.596946I$	$2.03787 - 1.45102I$	0
$u = 1.034710 - 0.424655I$ $a = 0.678821 - 0.419020I$ $b = 0.453832 - 0.596946I$	$2.03787 + 1.45102I$	0
$u = 0.887489 + 0.698307I$ $a = -1.81058 + 0.09319I$ $b = 0.549211 - 0.690031I$	$2.49176 - 2.67187I$	0
$u = 0.887489 - 0.698307I$ $a = -1.81058 - 0.09319I$ $b = 0.549211 + 0.690031I$	$2.49176 + 2.67187I$	0
$u = 0.759240 + 0.855036I$ $a = -0.365619 - 1.259310I$ $b = 0.353657 + 0.964749I$	$-1.327970 - 0.401840I$	0
$u = 0.759240 - 0.855036I$ $a = -0.365619 + 1.259310I$ $b = 0.353657 - 0.964749I$	$-1.327970 + 0.401840I$	0
$u = 0.967500 + 0.663999I$ $a = -1.16043 - 1.12609I$ $b = 1.042120 + 0.405267I$	$-1.88422 - 5.29403I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.967500 - 0.663999I$ $a = -1.16043 + 1.12609I$ $b = 1.042120 - 0.405267I$	$-1.88422 + 5.29403I$	0
$u = -0.826690 + 0.842297I$ $a = 1.264590 - 0.276686I$ $b = -1.032940 - 0.397310I$	$10.14220 + 0.91099I$	0
$u = -0.826690 - 0.842297I$ $a = 1.264590 + 0.276686I$ $b = -1.032940 + 0.397310I$	$10.14220 - 0.91099I$	0
$u = -0.979456 + 0.706863I$ $a = 1.99453 - 0.39746I$ $b = -0.548510 - 1.048100I$	$1.00480 + 7.36064I$	0
$u = -0.979456 - 0.706863I$ $a = 1.99453 + 0.39746I$ $b = -0.548510 + 1.048100I$	$1.00480 - 7.36064I$	0
$u = -1.200290 + 0.153170I$ $a = 0.338551 - 0.939110I$ $b = -0.631973 - 1.218280I$	$-4.88195 + 9.31216I$	0
$u = -1.200290 - 0.153170I$ $a = 0.338551 + 0.939110I$ $b = -0.631973 + 1.218280I$	$-4.88195 - 9.31216I$	0
$u = 0.967716 + 0.732266I$ $a = 1.56362 + 0.49238I$ $b = -0.42587 + 1.36774I$	$4.57399 - 5.44218I$	0
$u = 0.967716 - 0.732266I$ $a = 1.56362 - 0.49238I$ $b = -0.42587 - 1.36774I$	$4.57399 + 5.44218I$	0
$u = -1.000590 + 0.727268I$ $a = 0.73771 - 1.21462I$ $b = -1.35820 + 0.57857I$	$3.44867 + 8.76620I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.000590 - 0.727268I$ $a = 0.73771 + 1.21462I$ $b = -1.35820 - 0.57857I$	$3.44867 - 8.76620I$	0
$u = -0.946573 + 0.803204I$ $a = -0.739615 + 0.818673I$ $b = 1.022410 - 0.261567I$	$9.77457 + 5.21014I$	0
$u = -0.946573 - 0.803204I$ $a = -0.739615 - 0.818673I$ $b = 1.022410 + 0.261567I$	$9.77457 - 5.21014I$	0
$u = 0.995841 + 0.763155I$ $a = 1.69209 - 0.43161I$ $b = -0.479759 + 1.044820I$	$-2.07273 - 5.62883I$	0
$u = 0.995841 - 0.763155I$ $a = 1.69209 + 0.43161I$ $b = -0.479759 - 1.044820I$	$-2.07273 + 5.62883I$	0
$u = 0.147072 + 0.728915I$ $a = 0.683793 - 0.110743I$ $b = -0.656032 + 0.815272I$	$4.76220 - 2.53471I$	$-1.46695 + 3.47281I$
$u = 0.147072 - 0.728915I$ $a = 0.683793 + 0.110743I$ $b = -0.656032 - 0.815272I$	$4.76220 + 2.53471I$	$-1.46695 - 3.47281I$
$u = -0.150086 + 0.725683I$ $a = 0.54471 + 1.31256I$ $b = -0.202918 - 1.187480I$	$-6.11100 + 2.42065I$	$-11.51467 - 3.42821I$
$u = -0.150086 - 0.725683I$ $a = 0.54471 - 1.31256I$ $b = -0.202918 + 1.187480I$	$-6.11100 - 2.42065I$	$-11.51467 + 3.42821I$
$u = 1.027010 + 0.742791I$ $a = -1.86187 - 0.57547I$ $b = 0.67693 - 1.27703I$	$6.70036 - 11.40770I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.027010 - 0.742791I$ $a = -1.86187 + 0.57547I$ $b = 0.67693 + 1.27703I$	$6.70036 + 11.40770I$	0
$u = -0.730565$ $a = 0.0171409$ $b = -0.401918$	-1.07739	-9.03050
$u = -1.038750 + 0.736760I$ $a = -2.04598 + 0.10778I$ $b = 0.672589 + 1.206980I$	$-4.41235 + 11.46610I$	0
$u = -1.038750 - 0.736760I$ $a = -2.04598 - 0.10778I$ $b = 0.672589 - 1.206980I$	$-4.41235 - 11.46610I$	0
$u = 1.166100 + 0.516708I$ $a = -0.690535 + 0.225074I$ $b = -0.402473 - 1.048200I$	$-2.57120 + 1.00877I$	0
$u = 1.166100 - 0.516708I$ $a = -0.690535 - 0.225074I$ $b = -0.402473 + 1.048200I$	$-2.57120 - 1.00877I$	0
$u = 1.073740 + 0.736661I$ $a = 2.00421 + 0.50463I$ $b = -0.84789 + 1.28835I$	$1.0897 - 16.4761I$	0
$u = 1.073740 - 0.736661I$ $a = 2.00421 - 0.50463I$ $b = -0.84789 - 1.28835I$	$1.0897 + 16.4761I$	0
$u = -0.942740 + 0.934437I$ $a = -0.350351 - 0.512078I$ $b = 0.061691 + 0.565881I$	$8.96196 + 3.42091I$	0
$u = -0.942740 - 0.934437I$ $a = -0.350351 + 0.512078I$ $b = 0.061691 - 0.565881I$	$8.96196 - 3.42091I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.111200+0.545459I$ $a=-1.08297-1.20293I$ $b=\ \ 0.699790-0.645759I$	$1.50806+1.20124I$	$-5.48394-0.07233I$
$u=-0.111200-0.545459I$ $a=-1.08297+1.20293I$ $b=\ \ 0.699790+0.645759I$	$1.50806-1.20124I$	$-5.48394+0.07233I$
$u=-0.193935+0.335714I$ $a=-1.051420-0.253121I$ $b=\ \ 0.180316+0.662567I$	$-0.404941+0.957173I$	$-6.94345-7.00511I$
$u=-0.193935-0.335714I$ $a=-1.051420+0.253121I$ $b=\ \ 0.180316-0.662567I$	$-0.404941-0.957173I$	$-6.94345+7.00511I$
$u=\ \ 0.311045$ $a=\ \ 3.80168$ $b=-0.461365$	-2.06404	-1.31720

II. $\boldsymbol{I_2^u = \langle b,\ u^4 - u^2 + a - 2u + 1,\ u^5 + u^4 - u^2 + u + 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ -u^4 - u^3 + u^2 - 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^4 + u^2 + 2u - 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^3 \\ u^4 + u^3 - u^2 + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^4 - u^3 + u^2 + 2u - 1 \\ u^4 + u^3 - u^2 + 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^4 + u^2 + 2u - 1 \\ 0 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -9u^4 - u^3 + 2u^2 + 4u - 17$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3, c_4	$u^5 - u^4 + 4u^3 - 3u^2 + 3u - 1$
c_2	$u^5 - u^4 + u^2 + u - 1$
c_5, c_{11}	u^5
c_6	$u^5 + u^4 - u^2 + u + 1$
c_7, c_8	$u^5 + u^4 + 4u^3 + 3u^2 + 3u + 1$
c_9, c_{10}	$(u - 1)^5$
c_{12}	$(u + 1)^5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_4 c_7, c_8	$y^5 + 7y^4 + 16y^3 + 13y^2 + 3y - 1$
c_2, c_6	$y^5 - y^4 + 4y^3 - 3y^2 + 3y - 1$
c_5, c_{11}	y^5
c_9, c_{10}, c_{12}	$(y-1)^5$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.758138 + 0.584034I$ $a = 1.47956 + 1.63976I$ $b = 0$	$0.17487 - 2.21397I$	$-6.59361 - 0.42541I$
$u = 0.758138 - 0.584034I$ $a = 1.47956 - 1.63976I$ $b = 0$	$0.17487 + 2.21397I$	$-6.59361 + 0.42541I$
$u = -0.935538 + 0.903908I$ $a = 0.044146 + 0.313338I$ $b = 0$	$9.31336 + 3.33174I$	$3.61324 + 0.36944I$
$u = -0.935538 - 0.903908I$ $a = 0.044146 - 0.313338I$ $b = 0$	$9.31336 - 3.33174I$	$3.61324 - 0.36944I$
$u = -0.645200$ $a = -2.04741$ $b = 0$	-2.52712	-20.0390

III. $I_3^u = \langle -u^3a - u^2a + 2u^3 + au - u^2 + 2b - u + 1,\ -2u^3a + u^2a + 3u^3 + a^2 + au - u^2 - a - 2u,\ u^4 - u^2 + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ \frac{1}{2}u^3a - u^3 + \cdots + \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -\frac{1}{2}u^2a - \frac{1}{2}u^3 + \cdots + \frac{1}{2}a - \frac{1}{2} \\ -\frac{1}{2}u^3a + \frac{1}{2}u^2a + \cdots + \frac{1}{2}u - \frac{3}{2} \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{1}{2}u^2a - \frac{1}{2}u^3 + \cdots + \frac{1}{2}a - \frac{1}{2} \\ -\frac{1}{2}u^3a - u^3 + \cdots + \frac{3}{2}u - \frac{3}{2} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{1}{2}u^2a - \frac{3}{2}u^3 + \cdots - \frac{1}{2}a + \frac{1}{2} \\ -\frac{1}{2}u^3a + 2u^3 + \cdots - \frac{1}{2}u + \frac{1}{2} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{1}{2}u^3a + u^3 + \cdots + a + \frac{1}{2} \\ \frac{1}{2}u^3a - u^3 + \cdots + \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} \frac{1}{2}u^3a - \frac{3}{2}u^3 + \cdots - \frac{1}{2}a + \frac{5}{2}u \\ -\frac{1}{2}u^3a + 2u^3 + \cdots - \frac{1}{2}u + \frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^2 - 12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^2 - u + 1)^4$
c_2, c_6	$(u^4 - u^2 + 1)^2$
c_3, c_4, c_8	$(u^2 + 1)^4$
c_5, c_{11}	$(u^4 + 3u^2 + 1)^2$
c_7	$(u^2 + u + 1)^4$
c_9, c_{10}	$(u^2 + u - 1)^4$
c_{12}	$(u^2 - u - 1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^2 + y + 1)^4$
c_2, c_6	$(y^2 - y + 1)^4$
c_3, c_4, c_8	$(y + 1)^8$
c_5, c_{11}	$(y^2 + 3y + 1)^4$
c_9, c_{10}, c_{12}	$(y^2 - 3y + 1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.866025 + 0.500000I$ $a = 1.344250 - 0.092242I$ $b = 0.618034I$	$0.65797 - 2.02988I$	$-10.00000 + 3.46410I$
$u = 0.866025 + 0.500000I$ $a = -1.71028 + 0.72622I$ $b = -1.61803I$	$-7.23771 - 2.02988I$	$-10.00000 + 3.46410I$
$u = 0.866025 - 0.500000I$ $a = 1.344250 + 0.092242I$ $b = -0.618034I$	$0.65797 + 2.02988I$	$-10.00000 - 3.46410I$
$u = 0.866025 - 0.500000I$ $a = -1.71028 - 0.72622I$ $b = 1.61803I$	$-7.23771 + 2.02988I$	$-10.00000 - 3.46410I$
$u = -0.866025 + 0.500000I$ $a = 1.092240 - 0.344250I$ $b = -1.61803I$	$-7.23771 + 2.02988I$	$-10.00000 - 3.46410I$
$u = -0.866025 + 0.500000I$ $a = 0.27378 + 2.71028I$ $b = 0.618034I$	$0.65797 + 2.02988I$	$-10.00000 - 3.46410I$
$u = -0.866025 - 0.500000I$ $a = 1.092240 + 0.344250I$ $b = 1.61803I$	$-7.23771 - 2.02988I$	$-10.00000 + 3.46410I$
$u = -0.866025 - 0.500000I$ $a = 0.27378 - 2.71028I$ $b = -0.618034I$	$0.65797 - 2.02988I$	$-10.00000 + 3.46410I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2-u+1)^4(u^5-u^4+4u^3-3u^2+3u-1)$ $\cdot(u^{85}+28u^{84}+\cdots+1107u+81)$
c_2	$((u^4-u^2+1)^2)(u^5-u^4+u^2+u-1)(u^{85}-2u^{84}+\cdots+3u-9)$
c_3, c_4	$((u^2+1)^4)(u^5-u^4+\cdots+3u-1)(u^{85}-2u^{84}+\cdots+144u-36)$
c_5, c_{11}	$u^5(u^4+3u^2+1)^2(u^{85}+u^{84}+\cdots-96u-32)$
c_6	$((u^4-u^2+1)^2)(u^5+u^4-u^2+u+1)(u^{85}-2u^{84}+\cdots+3u-9)$
c_7	$(u^2+u+1)^4(u^5+u^4+4u^3+3u^2+3u+1)$ $\cdot(u^{85}+28u^{84}+\cdots+1107u+81)$
c_8	$((u^2+1)^4)(u^5+u^4+\cdots+3u+1)(u^{85}-2u^{84}+\cdots+144u-36)$
c_9, c_{10}	$((u-1)^5)(u^2+u-1)^4(u^{85}-10u^{84}+\cdots+17u-1)$
c_{12}	$((u+1)^5)(u^2-u-1)^4(u^{85}-10u^{84}+\cdots+17u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^2+y+1)^4(y^5+7y^4+16y^3+13y^2+3y-1)$ $\cdot(y^{85}+64y^{84}+\cdots+485595y-6561)$
c_2, c_6	$(y^2-y+1)^4(y^5-y^4+4y^3-3y^2+3y-1)$ $\cdot(y^{85}-28y^{84}+\cdots+1107y-81)$
c_3, c_4, c_8	$(y+1)^8(y^5+7y^4+16y^3+13y^2+3y-1)$ $\cdot(y^{85}+80y^{84}+\cdots+16776y-1296)$
c_5, c_{11}	$y^5(y^2+3y+1)^4(y^{85}+45y^{84}+\cdots+22016y-1024)$
c_9, c_{10}, c_{12}	$((y-1)^5)(y^2-3y+1)^4(y^{85}-80y^{84}+\cdots-91y-1)$