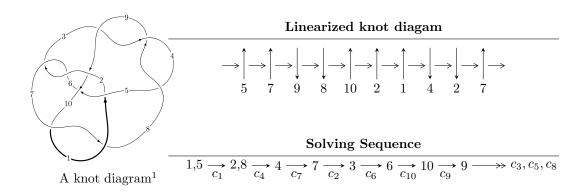
$10_{162} \ (K10n_{40})$



Ideals for irreducible components² of X_{par}

$$\begin{split} I_1^u &= \langle b-u, \ -u^9 + u^8 + 3u^7 - 2u^6 - 8u^5 + 3u^4 + 8u^3 + a - 5u + 2, \\ u^{10} - u^9 - 3u^8 + 3u^7 + 7u^6 - 5u^5 - 6u^4 + 4u^3 + 3u^2 - 3u + 1 \rangle \\ I_2^u &= \langle -30u^{11} + 6u^{10} + 76u^9 - 92u^8 + 34u^7 + 209u^6 - 204u^5 - 228u^4 + 66u^3 + 529u^2 + 95b + 28u - 416, \\ &- 336u^{11} + 50u^{10} + \dots + 1045a - 3305, \\ u^{12} - u^{11} - 2u^{10} + 5u^9 - 4u^8 - 5u^7 + 11u^6 + u^5 - 6u^4 - 16u^3 + 16u^2 + 10u - 11 \rangle \\ I_3^u &= \langle b+u, \ u^2 + a - 1, \ u^5 - u^4 - u^3 + u^2 + 1 \rangle \end{split}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 27 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).

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

I.
$$I_1^u = \langle b - u, -u^9 + u^8 + \dots + a + 2, u^{10} - u^9 + \dots - 3u + 1 \rangle$$

(i) Arc colorings

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

$$a_{5} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{8} = \begin{pmatrix} u^{9} - u^{8} - 3u^{7} + 2u^{6} + 8u^{5} - 3u^{4} - 8u^{3} + 5u - 2 \\ u \end{pmatrix}$$

$$a_{4} = \begin{pmatrix} u^{9} - u^{8} - 2u^{7} + 3u^{6} + 3u^{5} - 3u^{4} + u^{3} + 3u^{2} - 2u \\ -u^{8} + u^{7} + 2u^{6} - 2u^{5} - 4u^{4} + 2u^{3} + u^{2} \end{pmatrix}$$

$$a_{7} = \begin{pmatrix} u^{9} - u^{8} - 3u^{7} + 2u^{6} + 8u^{5} - 3u^{4} - 8u^{3} + 4u - 2 \\ u \end{pmatrix}$$

$$a_{3} = \begin{pmatrix} -2u^{9} + u^{8} + 5u^{7} - u^{6} - 12u^{5} - 2u^{4} + 7u^{3} + 2u^{2} - 4u + 3 \\ u^{9} - u^{8} - 2u^{7} + 2u^{6} + 4u^{5} - u^{4} - u^{3} - u^{2} \end{pmatrix}$$

$$a_{6} = \begin{pmatrix} u^{9} - 4u^{7} + 10u^{5} + u^{4} - 9u^{3} - u^{2} + 4u - 2 \\ -u^{8} + u^{7} + 3u^{6} - 4u^{5} - 5u^{4} + 4u^{3} + 3u^{2} - 2u + 1 \end{pmatrix}$$

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

$$a_{9} = \begin{pmatrix} -u^{9} + u^{8} + u^{7} - u^{6} - 2u^{5} - u^{4} - 3u^{3} + 2u^{2} + u \\ u^{9} - u^{8} - 3u^{7} + 4u^{6} + 5u^{5} - 5u^{4} - 3u^{3} + 4u^{2} - u \end{pmatrix}$$

- (ii) Obstruction class = -1
- (iii) Cusp Shapes = $-5u^9 + 4u^8 + 16u^7 11u^6 39u^5 + 15u^4 + 38u^3 11u^2 21u + 14u^3 + 15u^4 + 15u$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7, c_{10}	$u^{10} - u^9 - 3u^8 + 3u^7 + 7u^6 - 5u^5 - 6u^4 + 4u^3 + 3u^2 - 3u + 1$
c_2, c_5, c_6	$u^{10} + 7u^8 - u^7 + 20u^6 - 6u^5 + 25u^4 - 8u^3 + 10u^2 - 2u + 1$
c_3, c_4, c_8	$u^{10} + 5u^9 + \dots + 18u + 4$
<i>c</i> ₉	$u^{10} - 9u^9 + \dots - 20u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7, c_{10}	$y^{10} - 7y^9 + \dots - 3y + 1$
c_2, c_5, c_6	$y^{10} + 14y^9 + \dots + 16y + 1$
c_3, c_4, c_8	$y^{10} + 9y^9 + \dots + 68y + 16$
<i>c</i> ₉	$y^{10} - 5y^9 + \dots + 496y + 64$

(vi) Complex Volumes and Cusp Shapes

$\begin{array}{c} u = 0.834890 + 0.288236I \\ a = -1.16719 - 0.85231I \\ b = 0.834890 + 0.288236I \\ u = 0.834890 - 0.288236I \\ a = -1.16719 + 0.85231I \\ b = 0.834890 - 0.288236I \\ a = -1.16719 + 0.85231I \\ b = 0.834890 - 0.288236I \\ u = -0.989389 + 0.553558I \\ a = -0.604538 + 1.276350I \\ b = -0.989389 + 0.553558I \\ a = -0.604538 + 1.276350I \\ b = -0.989389 - 0.553558I \\ a = -0.604538 - 1.276350I \\ b = -0.989389 - 0.553558I \\ a = -0.604538 - 1.276350I \\ b = -0.989389 - 0.553558I \\ a = -0.571463 + 0.630872I \\ a = 0.571463 + 0.630872I \\ a = 0.571463 - 0.630872I \\ a = 0.329249 + 0.368284I \\ a = 0.479615 + 1.097570I \\ b = 0.329249 + 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.220652 + 0.935375I \\ b = 1.41827 + 0.76674I \\ a = 0.220652 - 0.935375I \\ b = 1.41827 - 0.76674I \\ a = 0.220652 - 0.935375I \\ b = 1.41827 - 0.76674I \\ a = 0.220652 - 0.935375I \\ b = 1.41827 - 0.76674I \\ a = 0.220652 - 0.935375I \\ b = 1.41827 - 0.76674I \\ a = 0.220652 - 0.935375I \\ b = 1.41827 - 0.76674I \\ a = 0.220652 - 0.935375I \\ b = 1.41827 - 0.76674I \\ a = 0.220652 - 0.935375I \\ c = 0.44804 - 10.69340I \\ c = 0.67084 - 0.80149I \\ c = 0.66082 - 0.80149I \\ c = 0.66082 - 0.935375I \\ c = 0.66082 - 0$	Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$\begin{array}{c} b = & 0.834890 + 0.288236I \\ u = & 0.834890 - 0.288236I \\ a = -1.16719 + 0.85231I \\ b = & 0.834890 - 0.288236I \\ u = -0.989389 + 0.553558I \\ a = -0.604538 + 1.276350I \\ b = -0.989389 + 0.553558I \\ u = -0.989389 - 0.553558I \\ u = -1.093020 + 0.614392I \\ u = -1.093020 + 0.614392I \\ u = -1.093020 - 0.614392I \\ u = -1.093020 - 0.614392I \\ u = 0.329249 + 0.368284I \\ u = 0.329249 + 0.368284I \\ u = 0.329249 - 0.368284I \\ u = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ u = 0.429655 - 0.935375I \\ b = 1.41827 + 0.76674I \\ u = 1.41827 - 0.76674I \\ u = 1.41827 -$	u = 0.834890 + 0.288236I		
$\begin{array}{c} u = & 0.834890 - 0.288236I \\ a = & -1.16719 + 0.85231I \\ b = & 0.834890 - 0.288236I \\ u = & -0.989389 + 0.553558I \\ a = & -0.604538 + 1.276350I \\ b = & -0.989389 + 0.553558I \\ u = & -0.989389 - 0.553558I \\ u = & -1.093020 + 0.614392I \\ a = & 0.571463 + 0.630872I \\ b = & -1.093020 + 0.614392I \\ u = & -1.093020 - 0.614392I \\ u = & -1.093020 - 0.614392I \\ u = & 0.329249 + 0.368284I \\ u = & 0.329249 + 0.368284I \\ u = & 0.329249 - 0.368284I \\ u = & 0.479615 - 1.097570I \\ b = & 0.329249 - 0.368284I \\ u = & 0.329249 - 0.368284I \\ u = & 0.429655 - 1.095570I \\ b = & 0.329249 - 0.368284I \\ u = & 1.41827 + 0.76674I \\ u = & 1.41827 - 0.76674I \\ u = & 0.220652 - 0.935375I \\ 2.44804 - 10.69340I \\ 5.16708 + 5.74333I \\ \end{array}$	a = -1.16719 - 0.85231I	-1.336140 - 0.440636I	5.86082 - 0.80149I
$\begin{array}{llllllllllllllllllllllllllllllllllll$	b = 0.834890 + 0.288236I		
$\begin{array}{c} b = 0.834890 - 0.288236I \\ u = -0.989389 + 0.553558I \\ a = -0.604538 + 1.276350I \\ b = -0.989389 + 0.553558I \\ u = -0.989389 - 0.553558I \\ a = -0.604538 - 1.276350I \\ b = -0.989389 - 0.553558I \\ a = -0.604538 - 1.276350I \\ b = -0.989389 - 0.553558I \\ u = -1.093020 + 0.614392I \\ a = 0.571463 + 0.630872I \\ a = 0.571463 - 0.630872I \\ a = 0.393249 + 0.368284I \\ a = 0.479615 + 1.097570I \\ a = 0.329249 + 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ a = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.44804 - 10.69340I \\ b = 0.479615 - 0.76674I \\ a = 0.220652 - 0.935375I \\ c = 0.44804 - 10.69340I \\ c = 0.479615 + 0.76084I \\ c = 0.479615 - 0.76674I \\ c = 0.220652 - 0.935375I \\ c = 0.44804 - 10.69340I \\ c = 0.479615 + 0.76084I \\ c = 0.479615 - 0.76674I \\ c = 0.220652 - 0.935375I \\ c = 0.44804 - 10.69340I \\ c = 0.479615 - 0.76084I \\ c = 0.479615 - 0.76674I \\ c = 0.220652 - 0.935375I \\ c = 0.44804 - 10.69340I \\ c = 0.479615 - 0.76084I \\ c = 0.479615 - 0.76674I \\ c = 0.479615 - 0.76674I$	u = 0.834890 - 0.288236I		
$\begin{array}{c} u = -0.989389 + 0.553558I \\ a = -0.604538 + 1.276350I \\ b = -0.989389 + 0.553558I \\ u = -0.989389 - 0.553558I \\ a = -0.604538 - 1.276350I \\ b = -0.989389 - 0.553558I \\ a = -0.604538 - 1.276350I \\ b = -0.989389 - 0.553558I \\ u = -1.093020 + 0.614392I \\ a = 0.571463 + 0.630872I \\ a = 0.571463 - 0.630872I \\ a = 0.329249 + 0.368284I \\ a = 0.479615 + 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ b = 0.329249 - 0.368284I \\ c = 0.479615 - 1.097570I \\ c = 0$	a = -1.16719 + 0.85231I	-1.336140 + 0.440636I	5.86082 + 0.80149I
$\begin{array}{c} a = -0.604538 + 1.276350I \\ b = -0.989389 + 0.553558I \\ u = -0.989389 - 0.553558I \\ a = -0.604538 - 1.276350I \\ b = -0.989389 - 0.553558I \\ \hline \\ a = -0.989389 - 0.553558I \\ \hline \\ u = -1.093020 + 0.614392I \\ a = 0.571463 + 0.630872I \\ a = 0.571463 - 0.630872I \\ a = 0.329249 + 0.368284I \\ a = 0.479615 + 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.44827 + 0.76674I \\ a = 0.220652 - 0.935375I \\ 2.44804 - 10.69340I \\ 5.16708 + 5.74333I \\ 5.16708 + 5.74333I \\ 6.16708 + 5.74333I \\ 6.1670$	b = 0.834890 - 0.288236I		
$\begin{array}{c} b = -0.989389 + 0.553558I \\ u = -0.989389 - 0.553558I \\ a = -0.604538 - 1.276350I \\ b = -0.989389 - 0.553558I \\ \hline \\ u = -1.093020 + 0.614392I \\ a = 0.571463 + 0.630872I \\ a = 0.571463 - 0.630872I \\ \hline \\ u = -1.093020 - 0.614392I \\ a = 0.571463 - 0.630872I \\ a = 0.571463 - 0.630872I \\ \hline \\ u = -1.093020 - 0.614392I \\ \hline \\ u = 0.329249 + 0.368284I \\ a = 0.479615 + 1.097570I \\ u = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ a = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ a = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ a = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ a = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ a = 0.220652 + 0.935375I \\ a = 0.220652 - 0.9$	u = -0.989389 + 0.553558I		
$\begin{array}{c} u = -0.989389 - 0.553558I \\ a = -0.604538 - 1.276350I \\ b = -0.989389 - 0.553558I \\ \hline \\ u = -1.093020 + 0.614392I \\ a = 0.571463 + 0.630872I \\ b = -1.093020 - 0.614392I \\ \hline \\ u = -1.093020 - 0.614392I \\ \hline \\ u = 0.571463 - 0.630872I \\ \hline \\ u = 0.571463 - 0.630872I \\ \hline \\ u = 0.329249 + 0.368284I \\ \hline \\ u = 0.329249 + 0.368284I \\ \hline \\ u = 0.329249 - 0.368284I \\ \hline \\ u = 1.41827 + 0.76674I \\ \hline \\ u = 1.41827 - 0.76674I \\ \hline \\ u = 1.41827 - 0.76674I \\ \hline \\ u = 0.220652 - 0.935375I \\ \hline \end{array}$	a = -0.604538 + 1.276350I	7.86026 - 2.34852I	3.25800 + 2.98056I
$\begin{array}{llllllllllllllllllllllllllllllllllll$	b = -0.989389 + 0.553558I		
$\begin{array}{c} b = -0.989389 - 0.553558I \\ \hline u = -1.093020 + 0.614392I \\ a = 0.571463 + 0.630872I \\ \hline b = -1.093020 + 0.614392I \\ \hline u = -1.093020 - 0.614392I \\ \hline u = 0.571463 - 0.630872I \\ \hline b = -1.093020 - 0.614392I \\ \hline u = 0.329249 + 0.368284I \\ \hline u = 0.329249 + 0.368284I \\ \hline u = 0.329249 - 0.368284I \\ \hline u = 1.41827 + 0.76674I \\ \hline u = 1.41827 - 0.76674I \\ \hline u = 0.220652 - 0.935375I \\ \hline 2.44804 - 10.69340I \\ \hline 5.16708 + 5.74333I \\ \hline 5.16708 + 5.74333I \\ \hline \end{array}$	u = -0.989389 - 0.553558I		
$\begin{array}{c} u = -1.093020 + 0.614392I \\ a = 0.571463 + 0.630872I \\ b = -1.093020 + 0.614392I \\ \hline \\ u = -1.093020 - 0.614392I \\ \hline \\ u = 0.571463 - 0.630872I \\ \hline \\ a = 0.571463 - 0.630872I \\ \hline \\ u = 0.329249 + 0.368284I \\ \hline \\ u = 0.329249 + 0.368284I \\ \hline \\ u = 0.329249 + 0.368284I \\ \hline \\ u = 0.329249 - 0.368284I \\ \hline \\ u = 0.479615 - 1.097570I \\ \hline \\ u = 0.329249 - 0.368284I \\ \hline \\ u = 0.479615 - 1.097570I \\ \hline \\ u = 0.329249 - 0.368284I \\ \hline \\ u = 1.41827 + 0.76674I \\ \hline \\ u = 1.41827 + 0.76674I \\ \hline \\ u = 1.41827 - 0.76674I \\ \hline \\ u = 1.41827 - 0.76674I \\ \hline \\ u = 0.220652 - 0.935375I \\ \hline \\ 2.44804 - 10.69340I \\ \hline \\ 5.16708 + 5.74333I \\ \hline \end{array}$	a = -0.604538 - 1.276350I	7.86026 + 2.34852I	3.25800 - 2.98056I
$\begin{array}{llllllllllllllllllllllllllllllllllll$	b = -0.989389 - 0.553558I		
$\begin{array}{c} b = -1.093020 + 0.614392I \\ u = -1.093020 - 0.614392I \\ a = 0.571463 - 0.630872I \\ b = -1.093020 - 0.614392I \\ u = 0.329249 + 0.368284I \\ a = 0.479615 + 1.097570I \\ b = 0.329249 + 0.368284I \\ u = 0.329249 - 0.368284I \\ u = 0.329249 - 0.368284I \\ u = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ u = 1.41827 + 0.76674I \\ a = 0.220652 + 0.935375I \\ b = 1.41827 - 0.76674I \\ u = 1.41827 - 0.76674I \\ u = 1.41827 - 0.76674I \\ a = 0.220652 - 0.935375I \\ 2.44804 - 10.69340I \\ b = 5.16708 + 5.74333I \\ b = 5.16708 + 5.74333I \\ b = 1.41827 - 0.76674I \\ c = 0.220652 - 0.935375I \\ c = 0.220652 - 0.935375I \\ c = 0.220652 - 0.935375I \\ c = 0.24804 - 10.69340I \\ c = 0.220652 - 0.935375I \\ c = 0.24804 - 10.69340I \\ c = 0.220652 - 0.935375I \\ c = 0.24804 - 10.69340I \\ c = 0.220652 - 0.935375I \\ c = 0.24804 - 10.69340I \\ c = 0.220652 - 0.935375I \\ c = 0.244804 - 10.69340I \\ c = 0.220652 - 0.935375I \\ c = 0.244804 - 10.69340I \\ c = 0.220652 - 0.935375I \\ c = 0.244804 - 10.69340I \\ c = 0.220652 - 0.935375I \\ c = 0.244804 - 10.69340I \\ c = 0.220652 - 0.935375I \\ c = 0.2$	u = -1.093020 + 0.614392I		
$\begin{array}{c} u = -1.093020 - 0.614392I \\ a = 0.571463 - 0.630872I \\ b = -1.093020 - 0.614392I \\ \hline u = 0.329249 + 0.368284I \\ a = 0.479615 + 1.097570I \\ b = 0.329249 + 0.368284I \\ \hline u = 0.329249 - 0.368284I \\ \hline u = 1.41827 + 0.76674I \\ \hline u = 1.41827 - 0.76674I \\ \hline u = 1.41827 - 0.76674I \\ \hline u = 1.41827 - 0.76674I \\ \hline u = 0.220652 - 0.935375I \\ \hline 2.44804 - 10.69340I \\ \hline 2.44804 - 10.69340I \\ \hline 5.16708 + 5.74333I \\ \hline 5.16708 + 5.74333I \\ \hline \end{array}$	a = 0.571463 + 0.630872I	-3.41629 - 5.60135I	2.31471 + 5.03009I
$\begin{array}{llllllllllllllllllllllllllllllllllll$	b = -1.093020 + 0.614392I		
$\begin{array}{c} b = -1.093020 - 0.614392I \\ u = 0.329249 + 0.368284I \\ a = 0.479615 + 1.097570I \\ b = 0.329249 + 0.368284I \\ u = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ a = 0.479615 - 1.097570I \\ b = 0.329249 - 0.368284I \\ \hline u = 1.41827 + 0.76674I \\ a = 0.220652 + 0.935375I \\ b = 1.41827 - 0.76674I \\ u = 1.41827 - 0.76674I \\ a = 0.220652 - 0.935375I \\ 2.44804 - 10.69340I \\ \hline \end{array} \begin{array}{c} 5.16708 - 5.74333I \\ 5.16708 + 5.74333I \\ \hline \end{array}$	u = -1.093020 - 0.614392I		
$\begin{array}{llllllllllllllllllllllllllllllllllll$	a = 0.571463 - 0.630872I	-3.41629 + 5.60135I	2.31471 - 5.03009I
$\begin{array}{llllllllllllllllllllllllllllllllllll$			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	u = 0.329249 + 0.368284I		
$\begin{array}{llllllllllllllllllllllllllllllllllll$	a = 0.479615 + 1.097570I	0.201388 + 1.011140I	3.39938 - 6.83831I
$\begin{array}{lllll} a = & 0.479615 - 1.097570I & 0.201388 - 1.011140I & 3.39938 + 6.83831I \\ b = & 0.329249 - 0.368284I & & & & \\ \hline u = & 1.41827 + 0.76674I & & & & \\ a = & 0.220652 + 0.935375I & 2.44804 + 10.69340I & 5.16708 - 5.74333I \\ b = & 1.41827 + 0.76674I & & & & \\ \hline u = & 1.41827 - 0.76674I & & & & \\ a = & 0.220652 - 0.935375I & 2.44804 - 10.69340I & 5.16708 + 5.74333I \\ \end{array}$			
$\begin{array}{lllll} b = & 0.329249 - 0.368284I \\ u = & 1.41827 + 0.76674I \\ a = & 0.220652 + 0.935375I & 2.44804 + 10.69340I & 5.16708 - 5.74333I \\ b = & 1.41827 + 0.76674I \\ u = & 1.41827 - 0.76674I \\ a = & 0.220652 - 0.935375I & 2.44804 - 10.69340I & 5.16708 + 5.74333I \\ \end{array}$	u = 0.329249 - 0.368284I		
$\begin{array}{lllll} u = & 1.41827 + 0.76674I \\ a = & 0.220652 + 0.935375I & 2.44804 + 10.69340I & 5.16708 - 5.74333I \\ b = & 1.41827 + 0.76674I & & & & \\ u = & 1.41827 - 0.76674I & & & & \\ a = & 0.220652 - 0.935375I & 2.44804 - 10.69340I & 5.16708 + 5.74333I \end{array}$	a = 0.479615 - 1.097570I	0.201388 - 1.011140I	3.39938 + 6.83831I
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	b = 0.329249 - 0.368284I		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	u = 1.41827 + 0.76674I		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	a = 0.220652 + 0.935375I	2.44804 + 10.69340I	5.16708 - 5.74333I
$a = 0.220652 - 0.935375I \qquad 2.44804 - 10.69340I \qquad 5.16708 + 5.74333I$	b = 1.41827 + 0.76674I		
	u = 1.41827 - 0.76674I		
l 1.41997 0.700741	a = 0.220652 - 0.935375I	2.44804 - 10.69340I	5.16708 + 5.74333I
$\theta = 1.41627 - 0.700747$	b = 1.41827 - 0.76674I		

II.
$$I_2^u = \langle -30u^{11} + 6u^{10} + \cdots + 95b - 416, \ -336u^{11} + 50u^{10} + \cdots + 1045a - 3305, \ u^{12} - u^{11} + \cdots + 10u - 11 \rangle$$

(i) Arc colorings

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

$$a_{5} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{8} = \begin{pmatrix} 0.321531u^{11} - 0.0478469u^{10} + \dots + 0.449761u + 3.16268 \\ 0.315789u^{11} - 0.0631579u^{10} + \dots - 0.294737u + 4.37895 \end{pmatrix}$$

$$a_{4} = \begin{pmatrix} 0.107177u^{11} + 0.0612440u^{10} + \dots - 1.03254u - 0.359809 \\ 0.284211u^{11} + 0.126316u^{10} + \dots - u + 1.53684 \end{pmatrix}$$

$$a_{7} = \begin{pmatrix} 0.00574163u^{11} + 0.0153110u^{10} + \dots + 0.744498u - 1.21627 \\ 0.315789u^{11} - 0.0631579u^{10} + \dots - 0.294737u + 4.37895 \end{pmatrix}$$

$$a_{3} = \begin{pmatrix} 0.123445u^{11} - 0.0181818u^{10} + \dots + 0.0277512u + 2.61340 \\ -0.0210526u^{11} - 0.147368u^{10} + \dots + 1.27368u + 0.936842 \end{pmatrix}$$

$$a_{6} = \begin{pmatrix} -0.478469u^{11} - 0.00574163u^{10} + \dots + 1.18660u - 5.82679 \\ \frac{4}{5}u^{11} - \frac{1}{19}u^{10} + \dots - \frac{2}{95}u + \frac{944}{95} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.144498u^{11} - 0.129187u^{10} + \dots + 1.24593u - 1.67656 \\ 0.284211u^{11} + 0.273684u^{10} + \dots - 2.42105u + 2.07368 \end{pmatrix}$$

$$a_{9} = \begin{pmatrix} -0.123445u^{11} + 0.01818181u^{10} + \dots - 0.0277512u - 2.61340 \\ 0.0315789u^{11} + 0.126316u^{10} + \dots - 0.968421u + 0.221053 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes
$$= \frac{8}{19}u^{11} - \frac{36}{95}u^{10} - \frac{88}{95}u^9 + \frac{32}{19}u^8 - \frac{128}{95}u^7 - \frac{44}{19}u^6 + \frac{68}{19}u^5 + \frac{8}{5}u^4 - \frac{316}{95}u^3 - \frac{148}{19}u^2 + \frac{524}{95}u + \frac{706}{95}u^3 - \frac{148}{19}u^3 + \frac{148}{19}u^3$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7, c_{10}	$u^{12} - u^{11} + \dots + 10u - 11$
c_2, c_5, c_6	$u^{12} + u^{11} + \dots - 26u - 1$
c_3, c_4, c_8	$(u^3 - u^2 + 2u - 1)^4$
<i>C</i> 9	$(u^2 + u - 1)^6$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7, c_{10}	$y^{12} - 5y^{11} + \dots - 452y + 121$
c_2, c_5, c_6	$y^{12} + 7y^{11} + \dots - 680y + 1$
c_3,c_4,c_8	$(y^3 + 3y^2 + 2y - 1)^4$
<i>c</i> ₉	$(y^2 - 3y + 1)^6$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = 0.968966 + 0.268874I		
a = -0.141468 - 1.309750I	-0.92371 + 2.82812I	5.50976 - 2.97945I
b = 0.45076 - 1.47409I		
u = 0.968966 - 0.268874I		
a = -0.141468 + 1.309750I	-0.92371 - 2.82812I	5.50976 + 2.97945I
b = 0.45076 + 1.47409I		
u = -0.610709 + 0.902723I		
a = -0.292966 - 0.433049I	-5.06130	-6 - 1.019511 + 0.10I
b = -0.610709 - 0.902723I		
u = -0.610709 - 0.902723I		
a = -0.292966 + 0.433049I	-5.06130	-6 - 1.019511 + 0.10I
b = -0.610709 + 0.902723I		
u = -0.816782		
a = -0.697665	2.83439	-1.01950
b = 1.28332		
u = 1.008300 + 0.692219I		
a = -0.459918 - 0.980637I	6.97197 + 2.82812I	5.50976 - 2.97945I
b = -1.55059 - 0.23187I		
u = 1.008300 - 0.692219I		
a = -0.459918 + 0.980637I	6.97197 - 2.82812I	5.50976 + 2.97945I
b = -1.55059 + 0.23187I		
u = 1.28332		
a = 0.444035	2.83439	-1.01950
b = -0.816782		
u = 0.45076 + 1.47409I		
a = 0.851722 + 0.114540I	-0.92371 - 2.82812I	5.50976 + 2.97945I
b = 0.968966 - 0.268874I		
u = 0.45076 - 1.47409I		
a = 0.851722 - 0.114540I	-0.92371 + 2.82812I	5.50976 - 2.97945I
b = 0.968966 + 0.268874I		

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -1.55059 + 0.23187I		
a = -0.012373 - 0.844848I	6.97197 - 2.82812I	5.50976 + 2.97945I
b = 1.008300 - 0.692219I		
u = -1.55059 - 0.23187I		
a = -0.012373 + 0.844848I	6.97197 + 2.82812I	5.50976 - 2.97945I
b = 1.008300 + 0.692219I		

III.
$$I_3^u = \langle b+u, \ u^2+a-1, \ u^5-u^4-u^3+u^2+1 \rangle$$

(i) Arc colorings

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

$$a_{5} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{8} = \begin{pmatrix} -u^{2} + 1 \\ -u \end{pmatrix}$$

$$a_{4} = \begin{pmatrix} u^{4} - u^{3} - u^{2} + u - 1 \\ u^{4} - u^{2} + u \end{pmatrix}$$

$$a_{7} = \begin{pmatrix} -u^{2} + u + 1 \\ -u \end{pmatrix}$$

$$a_{3} = \begin{pmatrix} u^{4} - u^{3} - u^{2} + 2u \\ -u^{2} + 1 \end{pmatrix}$$

$$a_{6} = \begin{pmatrix} u^{4} - u^{3} - 2u^{2} + 2u + 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^{3} - u^{2} - u + 1 \\ u^{2} \end{pmatrix}$$

$$a_{9} = \begin{pmatrix} u^{3} - u \\ -u^{4} + 2u^{2} \end{pmatrix}$$

- (ii) Obstruction class = 1
- (iii) Cusp Shapes = $-2u^4 u^3 + 6u^2 + 5$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^5 - u^4 - u^3 + u^2 + 1$
c_2, c_5	$u^5 + u^3 - u^2 - u + 1$
c_3, c_4	$u^5 + 3u^3 + 2u + 1$
<i>C</i> ₆	$u^5 + u^3 + u^2 - u - 1$
<i>c</i> ₈	$u^5 + 3u^3 + 2u - 1$
<i>c</i> ₉	$u^5 - 2u^4 + u^3 - 2u^2 + 2u + 1$
c_{10}	$u^5 + u^4 - u^3 - u^2 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7, c_{10}	$y^5 - 3y^4 + 3y^3 + y^2 - 2y - 1$
c_2, c_5, c_6	$y^5 + 2y^4 - y^3 - 3y^2 + 3y - 1$
c_3, c_4, c_8	$y^5 + 6y^4 + 13y^3 + 12y^2 + 4y - 1$
c_9	$y^5 - 2y^4 - 3y^3 + 4y^2 + 8y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -1.15950		
a = -0.344435	3.66375	11.0100
b = 1.15950		
u = -0.144591 + 0.695997I		
a = 1.46351 + 0.20127I	-2.68365 + 1.36579I	1.66321 - 1.28728I
b = 0.144591 - 0.695997I		
u = -0.144591 - 0.695997I		
a = 1.46351 - 0.20127I	-2.68365 - 1.36579I	1.66321 + 1.28728I
b = 0.144591 + 0.695997I		
u = 1.224340 + 0.455764I		
a = -0.291288 - 1.116020I	9.07644 + 2.10101I	10.83155 - 1.02320I
b = -1.224340 - 0.455764I		
u = 1.224340 - 0.455764I		
a = -0.291288 + 1.116020I	9.07644 - 2.10101I	10.83155 + 1.02320I
b = -1.224340 + 0.455764I		

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^{5} - u^{4} - u^{3} + u^{2} + 1)$ $\cdot (u^{10} - u^{9} - 3u^{8} + 3u^{7} + 7u^{6} - 5u^{5} - 6u^{4} + 4u^{3} + 3u^{2} - 3u + 1)$ $\cdot (u^{12} - u^{11} + \dots + 10u - 11)$
c_2, c_5	$(u^{5} + u^{3} - u^{2} - u + 1)$ $\cdot (u^{10} + 7u^{8} - u^{7} + 20u^{6} - 6u^{5} + 25u^{4} - 8u^{3} + 10u^{2} - 2u + 1)$ $\cdot (u^{12} + u^{11} + \dots - 26u - 1)$
c_3, c_4	$((u^3 - u^2 + 2u - 1)^4)(u^5 + 3u^3 + 2u + 1)(u^{10} + 5u^9 + \dots + 18u + 4)$
c_6	$(u^{5} + u^{3} + u^{2} - u - 1)$ $\cdot (u^{10} + 7u^{8} - u^{7} + 20u^{6} - 6u^{5} + 25u^{4} - 8u^{3} + 10u^{2} - 2u + 1)$ $\cdot (u^{12} + u^{11} + \dots - 26u - 1)$
c_8	$((u^3 - u^2 + 2u - 1)^4)(u^5 + 3u^3 + 2u - 1)(u^{10} + 5u^9 + \dots + 18u + 4)$
c_9	$((u^{2}+u-1)^{6})(u^{5}-2u^{4}+\cdots+2u+1)(u^{10}-9u^{9}+\cdots-20u+8)$
c_{10}	$(u^{5} + u^{4} - u^{3} - u^{2} - 1)$ $\cdot (u^{10} - u^{9} - 3u^{8} + 3u^{7} + 7u^{6} - 5u^{5} - 6u^{4} + 4u^{3} + 3u^{2} - 3u + 1)$ $\cdot (u^{12} - u^{11} + \dots + 10u - 11)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_7, c_{10}	$(y^5 - 3y^4 + 3y^3 + y^2 - 2y - 1)(y^{10} - 7y^9 + \dots - 3y + 1)$ $\cdot (y^{12} - 5y^{11} + \dots - 452y + 121)$
c_2, c_5, c_6	$(y^5 + 2y^4 - y^3 - 3y^2 + 3y - 1)(y^{10} + 14y^9 + \dots + 16y + 1)$ $\cdot (y^{12} + 7y^{11} + \dots - 680y + 1)$
c_3, c_4, c_8	$(y^3 + 3y^2 + 2y - 1)^4 (y^5 + 6y^4 + 13y^3 + 12y^2 + 4y - 1)$ $\cdot (y^{10} + 9y^9 + \dots + 68y + 16)$
<i>c</i> ₉	$(y^2 - 3y + 1)^6 (y^5 - 2y^4 - 3y^3 + 4y^2 + 8y - 1)$ $\cdot (y^{10} - 5y^9 + \dots + 496y + 64)$