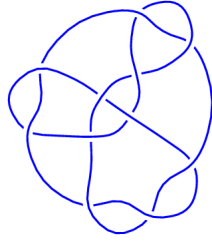
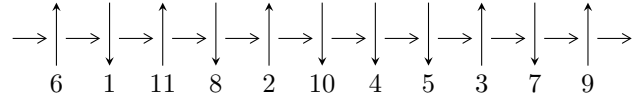


11a₁₆₃ (K11a₁₆₃)

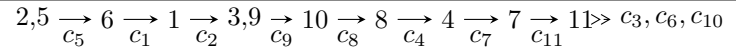


1

Arc Sequences



Solving Sequence



Representation Ideals

$$I = \bigcap_{i=1}^2 I_i^u$$

$$I_1^u = \langle u^{13} - u^{12} + 4u^{11} - 3u^{10} + 8u^9 - 6u^8 + 8u^7 - 7u^6 + 3u^5 - 6u^4 - u^3 - 3u^2 - u - 1, \\ - 2u^{11} + u^{10} - 6u^9 + 3u^8 - 11u^7 + 7u^6 - 7u^5 + 10u^4 + 8u^2 + a + 3u + 2, \\ - u^{11} + u^{10} - 4u^9 + 4u^8 - 8u^7 + 7u^6 - 7u^5 + 8u^4 - 2u^3 + 3u^2 + b + u + 1 \rangle$$

$$I_2^u = \langle u^{72} + 17u^{70} + \dots - u + 1, 5.69300 \times 10^{65}u^{71} + 3.66420 \times 10^{64}u^{70} + \dots + 5.98806 \times 10^{65}a - 1.18567 \times 10^{66} \\ 7.77862 \times 10^{65}u^{71} - 6.44760 \times 10^{65}u^{70} + \dots + 5.98806 \times 10^{65}b - 1.86215 \times 10^{65} \rangle$$

There are 2 irreducible components with 85 representations.

¹The knot diagram image is adapter from “C. Livingston and A. H. Moore, KnotInfo: Table of Knot Invariants, <http://www.indiana.edu/~knotinfo>”

$$I_1^u = \langle u^{13} - u^{12} + \dots - u - 1, \overset{\mathbf{I.}}{-2u^{11} + u^{10} + \dots + a + 2}, -u^{11} + u^{10} + \dots + b + 1 \rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^4 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2u^{11} - u^{10} + 6u^9 - 3u^8 + 11u^7 - 7u^6 + 7u^5 - 10u^4 - 8u^2 - 3u - 2 \\ u^{11} - u^{10} + 4u^9 - 4u^8 + 8u^7 - 7u^6 + 7u^5 - 8u^4 + 2u^3 - 3u^2 - u - 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2u^{11} - u^{10} + 6u^9 - 3u^8 + 11u^7 - 7u^6 + 7u^5 - 10u^4 - 7u^2 - 3u - 1 \\ u^{11} + 3u^9 - u^8 + 6u^7 - 3u^6 + 4u^5 - 7u^4 - 4u^2 - 2u - 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 2u^{11} - u^{10} + 6u^9 - 3u^8 + 11u^7 - 7u^6 + 7u^5 - 10u^4 - 8u^2 - 3u - 2 \\ -u^{12} + 3u^{11} + \dots - 3u - 3 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^{12} + 3u^{10} + 6u^8 - u^7 + 4u^6 - 4u^5 - 6u^3 - 4u^2 - 4u - 1 \\ -2u^{11} + u^{10} + \dots + 2u + 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{12} - 2u^{11} + \dots + 6u + 3 \\ 2u^{12} - 4u^{11} + \dots + 2u + 2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -2u^{12} + u^{11} + \dots + 4u + 1 \\ u^{12} - 2u^{11} + 3u^{10} - 6u^9 + 6u^8 - 11u^7 + 5u^6 - 8u^5 + 6u^4 + 5u^2 + 3u + 3 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -2u^{12} + u^{11} + \dots + 4u + 1 \\ u^{12} - 2u^{11} + 3u^{10} - 6u^9 + 6u^8 - 11u^7 + 5u^6 - 8u^5 + 6u^4 + 5u^2 + 3u + 3 \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes = unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.564862 - 1.080816I$		
$a = -0.449076 + 0.192847I$	$-1.43963 + 4.27361I$	$-3.28652 - 1.94242I$
$b = -0.013032 - 0.333605I$		
$u = -0.564862 + 1.080816I$		
$a = -0.449076 - 0.192847I$	$-1.43963 - 4.27361I$	$-3.28652 + 1.94242I$
$b = -0.013032 + 0.333605I$		
$u = -0.443976 - 0.410014I$		
$a = 0.700932 - 0.990323I$	$0.639447 + 0.198383I$	$-2.33125 + 0.81736I$
$b = 1.011605 - 0.353847I$		
$u = -0.443976 + 0.410014I$		
$a = 0.700932 + 0.990323I$	$0.639447 - 0.198383I$	$-2.33125 - 0.81736I$
$b = 1.011605 + 0.353847I$		
$u = -0.349870 - 0.909420I$		
$a = 0.571675 + 0.302017I$	$-3.76256 + 1.44897I$	$-0.77634 - 5.07895I$
$b = -1.04357 + 1.88317I$		
$u = -0.349870 + 0.909420I$		
$a = 0.571675 - 0.302017I$	$-3.76256 - 1.44897I$	$-0.77634 + 5.07895I$
$b = -1.04357 - 1.88317I$		
$u = 0.272707 - 0.834669I$		
$a = 0.73959 + 1.61876I$	$-9.45221 + 1.59908I$	$-10.36413 + 2.46917I$
$b = -0.569619 - 0.253022I$		
$u = 0.272707 + 0.834669I$		
$a = 0.73959 - 1.61876I$	$-9.45221 - 1.59908I$	$-10.36413 - 2.46917I$
$b = -0.569619 + 0.253022I$		
$u = 0.345453 - 1.027117I$		
$a = -0.36668 - 1.41355I$	$-10.26050 - 4.15031I$	$-8.69293 + 2.72489I$
$b = -0.97263 - 2.34146I$		
$u = 0.345453 + 1.027117I$		
$a = -0.36668 + 1.41355I$	$-10.26050 + 4.15031I$	$-8.69293 - 2.72489I$
$b = -0.97263 + 2.34146I$		

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.700273 - 1.221277I$ $a = 0.370003 + 0.867283I$ $b = 1.21901 + 1.03656I$	$-4.69184 - 6.21694I$	$-5.54626 + 10.85275I$
$u = 0.700273 + 1.221277I$ $a = 0.370003 - 0.867283I$ $b = 1.21901 - 1.03656I$	$-4.69184 + 6.21694I$	$-5.54626 - 10.85275I$
$u = 1.08055$ $a = -1.13288$ $b = -0.263539$	-1.28306	7.99487

$$\text{II. } J_2^u = \langle u^{72} + 17u^{70} + \dots - u + 1, 5.69 \times 10^{65}u^{71} + 3.66 \times 10^{64}u^{70} + \dots + 5.99 \times 10^{65}a - 1.19 \times 10^{66}, 7.78 \times 10^{65}u^{71} - 6.45 \times 10^{65}u^{70} + \dots + 5.99 \times 10^{65}b - 1.86 \times 10^{65} \rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^4 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.950725u^{71} - 0.0611917u^{70} + \dots - 8.38931u + 1.98005 \\ -1.29902u^{71} + 1.07674u^{70} + \dots - 0.0872015u + 0.310978 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.47703u^{71} - 0.254667u^{70} + \dots - 5.67977u + 1.66319 \\ -1.15579u^{71} + 0.480884u^{70} + \dots + 0.329368u + 0.0969772 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.950725u^{71} - 0.0611917u^{70} + \dots - 8.38931u + 1.98005 \\ -1.07463u^{71} + 0.758478u^{70} + \dots - 0.976735u + 0.249786 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2.05357u^{71} - 0.873645u^{70} + \dots - 10.0426u + 2.19385 \\ -2.74506u^{71} - 1.05708u^{70} + \dots + 2.80468u - 2.35209 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.23094u^{71} + 0.614017u^{70} + \dots + 5.66095u - 2.52917 \\ 1.42755u^{71} - 0.813110u^{70} + \dots - 0.382667u + 0.518603 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.60445u^{71} - 1.06712u^{70} + \dots + 2.27844u + 2.50716 \\ -0.223371u^{71} - 0.0291713u^{70} + \dots + 2.30028u - 1.75192 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.60445u^{71} - 1.06712u^{70} + \dots + 2.27844u + 2.50716 \\ -0.223371u^{71} - 0.0291713u^{70} + \dots + 2.30028u - 1.75192 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.950154 - 0.340310I$ $a = -1.53648 + 0.25711I$ $b = -0.472314 - 0.868510I$	$-7.89489 - 10.18184I$	$-4.39970 + 5.17085I$
$u = -0.950154 + 0.340310I$ $a = -1.53648 - 0.25711I$ $b = -0.472314 + 0.868510I$	$-7.89489 + 10.18184I$	$-4.39970 - 5.17085I$
$u = -0.794162 - 0.453233I$ $a = 1.44902 - 0.64499I$ $b = 0.529750 + 1.073076I$	$-3.22516 - 3.95142I$	$-2.96229 + 3.51289I$
$u = -0.794162 + 0.453233I$ $a = 1.44902 + 0.64499I$ $b = 0.529750 - 1.073076I$	$-3.22516 + 3.95142I$	$-2.96229 - 3.51289I$
$u = -0.775035 - 0.705599I$ $a = -0.304839 - 0.533982I$ $b = 0.478468 - 0.691938I$	$0.45501 + 2.74412I$	$2.62061 - 6.58454I$
$u = -0.775035 + 0.705599I$ $a = -0.304839 + 0.533982I$ $b = 0.478468 + 0.691938I$	$0.45501 - 2.74412I$	$2.62061 + 6.58454I$
$u = -0.681999 - 0.181568I$ $a = -0.057013 + 0.232464I$ $b = -0.535948 + 0.164385I$	$1.48009 + 0.06732I$	$8.50693 + 1.19475I$
$u = -0.681999 + 0.181568I$ $a = -0.057013 - 0.232464I$ $b = -0.535948 - 0.164385I$	$1.48009 - 0.06732I$	$8.50693 - 1.19475I$
$u = -0.630641 - 1.185246I$ $a = 0.360506 - 1.147988I$ $b = 1.99091 - 1.74440I$	$-10.4703 + 15.9193I$	$-6.85189 - 8.36957I$
$u = -0.630641 + 1.185246I$ $a = 0.360506 + 1.147988I$ $b = 1.99091 + 1.74440I$	$-10.4703 - 15.9193I$	$-6.85189 + 8.36957I$

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.614768 - 0.453497I$ $a = 0.046552 - 1.369771I$ $b = 0.621560 - 1.116640I$	$-1.24059 - 0.70092I$	$-3.96458 + 1.25636I$
$u = -0.614768 + 0.453497I$ $a = 0.046552 + 1.369771I$ $b = 0.621560 + 1.116640I$	$-1.24059 + 0.70092I$	$-3.96458 - 1.25636I$
$u = -0.613054 - 1.092111I$ $a = -0.451264 + 1.098316I$ $b = -2.45792 + 1.51317I$	$-5.13451 + 9.23572I$	$-5.81827 - 8.30669I$
$u = -0.613054 + 1.092111I$ $a = -0.451264 - 1.098316I$ $b = -2.45792 - 1.51317I$	$-5.13451 - 9.23572I$	$-5.81827 + 8.30669I$
$u = -0.600309 - 1.184395I$ $a = 0.028265 + 0.223843I$ $b = -0.495089 + 0.645877I$	$-1.42281 + 5.04884I$	$-2.82719 - 12.32546I$
$u = -0.600309 + 1.184395I$ $a = 0.028265 - 0.223843I$ $b = -0.495089 - 0.645877I$	$-1.42281 - 5.04884I$	$-2.82719 + 12.32546I$
$u = -0.550811 - 1.056744I$ $a = -1.004973 + 0.081788I$ $b = -0.054236 - 0.976249I$	$-2.99967 + 5.33296I$	$-7.64505 - 6.23927I$
$u = -0.550811 + 1.056744I$ $a = -1.004973 - 0.081788I$ $b = -0.054236 + 0.976249I$	$-2.99967 - 5.33296I$	$-7.64505 + 6.23927I$
$u = -0.541899 - 0.922731I$ $a = -0.420513 - 0.436000I$ $b = 0.584653 - 0.865697I$	$0.03676 + 2.24980I$	$-0.26399 - 2.57020I$
$u = -0.541899 + 0.922731I$ $a = -0.420513 + 0.436000I$ $b = 0.584653 + 0.865697I$	$0.03676 - 2.24980I$	$-0.26399 + 2.57020I$

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.474907 - 0.952227I$ $a = 0.707063 - 0.433856I$ $b = -0.121999 + 0.813962I$	$-0.15843 + 2.64508I$	$-2.08016 - 2.19137I$
$u = -0.474907 + 0.952227I$ $a = 0.707063 + 0.433856I$ $b = -0.121999 - 0.813962I$	$-0.15843 - 2.64508I$	$-2.08016 + 2.19137I$
$u = -0.470200 - 1.042547I$ $a = 0.529327 - 1.173864I$ $b = 2.74644 - 2.23625I$	$-10.28458 + 1.13066I$	$-9.68211 - 1.28236I$
$u = -0.470200 + 1.042547I$ $a = 0.529327 + 1.173864I$ $b = 2.74644 + 2.23625I$	$-10.28458 - 1.13066I$	$-9.68211 + 1.28236I$
$u = -0.442925 - 0.726814I$ $a = -0.304097 + 1.118310I$ $b = -1.45654 + 1.18670I$	$0.609165 + 1.192599I$	$-2.86974 - 6.15662I$
$u = -0.442925 + 0.726814I$ $a = -0.304097 - 1.118310I$ $b = -1.45654 - 1.18670I$	$0.609165 - 1.192599I$	$-2.86974 + 6.15662I$
$u = -0.426028 - 1.029616I$ $a = 0.499707 - 1.317761I$ $b = -0.03958 - 2.51058I$	$-10.60602 + 5.33661I$	$-10.20513 - 8.68617I$
$u = -0.426028 + 1.029616I$ $a = 0.499707 + 1.317761I$ $b = -0.03958 + 2.51058I$	$-10.60602 - 5.33661I$	$-10.20513 + 8.68617I$
$u = -0.314455 - 0.987227I$ $a = 0.872079 + 0.521784I$ $b = -0.86687 + 1.57007I$	$-4.69737 + 1.04071I$	$-11.41192 - 0.81876I$
$u = -0.314455 + 0.987227I$ $a = 0.872079 - 0.521784I$ $b = -0.86687 - 1.57007I$	$-4.69737 - 1.04071I$	$-11.41192 + 0.81876I$

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.293343 - 0.413513I$ $a = -1.44996 + 2.46945I$ $b = 0.13705 - 1.40851I$	$-8.45650 + 2.58799I$	$-6.38429 - 2.67811I$
$u = -0.293343 + 0.413513I$ $a = -1.44996 - 2.46945I$ $b = 0.13705 + 1.40851I$	$-8.45650 - 2.58799I$	$-6.38429 + 2.67811I$
$u = -0.157141 - 1.357404I$ $a = 0.270798 - 1.110863I$ $b = -0.045316 - 1.262510I$	$-13.8147 - 6.4968I$	$-9.98960 + 4.59431I$
$u = -0.157141 + 1.357404I$ $a = 0.270798 + 1.110863I$ $b = -0.045316 + 1.262510I$	$-13.8147 + 6.4968I$	$-9.98960 - 4.59431I$
$u = -0.079295 - 0.696769I$ $a = -0.41355 + 2.22957I$ $b = 0.849433 + 0.925172I$	$-8.96742 - 2.37559I$	$-5.52309 + 3.97031I$
$u = -0.079295 + 0.696769I$ $a = -0.41355 - 2.22957I$ $b = 0.849433 - 0.925172I$	$-8.96742 + 2.37559I$	$-5.52309 - 3.97031I$
$u = 0.005532 - 1.088180I$ $a = -0.037898 + 1.412052I$ $b = 0.482869 + 1.170887I$	$-8.67044 - 2.20266I$	$-8.24814 + 3.06701I$
$u = 0.005532 + 1.088180I$ $a = -0.037898 - 1.412052I$ $b = 0.482869 - 1.170887I$	$-8.67044 + 2.20266I$	$-8.24814 - 3.06701I$
$u = 0.086155 - 1.193606I$ $a = 0.499146 + 0.511741I$ $b = 0.167882 + 0.028889I$	$-6.57891 + 3.67515I$	$-8.82815 - 5.11413I$
$u = 0.086155 + 1.193606I$ $a = 0.499146 - 0.511741I$ $b = 0.167882 - 0.028889I$	$-6.57891 - 3.67515I$	$-8.82815 + 5.11413I$

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.208920 - 0.825464I$		
$a = -0.577853 - 0.573348I$	$-1.46471 + 0.85730I$	$-6.08976 - 4.46736I$
$b = 0.436247 - 0.199872I$		
$u = 0.208920 + 0.825464I$		
$a = -0.577853 + 0.573348I$	$-1.46471 - 0.85730I$	$-6.08976 + 4.46736I$
$b = 0.436247 + 0.199872I$		
$u = 0.335948 - 0.212346I$		
$a = 3.52584 + 1.53941I$	$-8.60610 + 2.68144I$	$-5.49009 - 1.95050I$
$b = 0.814425 - 1.015502I$		
$u = 0.335948 + 0.212346I$		
$a = 3.52584 - 1.53941I$	$-8.60610 - 2.68144I$	$-5.49009 + 1.95050I$
$b = 0.814425 + 1.015502I$		
$u = 0.341711 - 0.959879I$		
$a = 0.131891 + 0.182609I$	$-4.43635 - 1.24068I$	$-13.95090 + 0.78074I$
$b = 1.59766 + 1.61716I$		
$u = 0.341711 + 0.959879I$		
$a = 0.131891 - 0.182609I$	$-4.43635 + 1.24068I$	$-13.95090 - 0.78074I$
$b = 1.59766 - 1.61716I$		
$u = 0.421636 - 1.054606I$		
$a = -0.75840 - 1.30202I$	$-11.08039 - 0.40194I$	$-9.60031 + 1.91699I$
$b = -0.637238 - 0.802524I$		
$u = 0.421636 + 1.054606I$		
$a = -0.75840 + 1.30202I$	$-11.08039 + 0.40194I$	$-9.60031 - 1.91699I$
$b = -0.637238 + 0.802524I$		
$u = 0.462289 - 1.065052I$		
$a = -0.233516 - 1.377762I$	$-10.78700 - 6.40801I$	$-9.24549 + 6.85551I$
$b = -2.27698 - 1.43491I$		
$u = 0.462289 + 1.065052I$		
$a = -0.233516 + 1.377762I$	$-10.78700 + 6.40801I$	$-9.24549 - 6.85551I$
$b = -2.27698 + 1.43491I$		

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.482865 - 0.381048I$	$-1.50033 + 0.49934I$	$-4.97310 - 1.55605I$
$a = -1.158218 - 0.230495I$		
$b = 0.361676 - 0.060781I$		
$u = 0.482865 + 0.381048I$	$-1.50033 - 0.49934I$	$-4.97310 + 1.55605I$
$a = -1.158218 + 0.230495I$		
$b = 0.361676 + 0.060781I$		
$u = 0.533946 - 1.013709I$	$-3.06053 - 4.69031I$	$-8.68269 + 6.75230I$
$a = 0.193018 + 0.551546I$		
$b = -0.164536 + 1.052487I$		
$u = 0.533946 + 1.013709I$	$-3.06053 + 4.69031I$	$-8.68269 - 6.75230I$
$a = 0.193018 - 0.551546I$		
$b = -0.164536 - 1.052487I$		
$u = 0.575499 - 1.031323I$	$0.91167 - 6.46667I$	$-0.27924 + 8.67512I$
$a = 0.294285 - 0.524607I$		
$b = -1.23740 - 1.33152I$		
$u = 0.575499 + 1.031323I$	$0.91167 + 6.46667I$	$-0.27924 - 8.67512I$
$a = 0.294285 + 0.524607I$		
$b = -1.23740 + 1.33152I$		
$u = 0.59705 - 1.31039I$	$-7.22620 - 5.83293I$	$-6.15082 + 5.68855I$
$a = -0.388554 - 0.940654I$		
$b = -1.11302 - 1.53684I$		
$u = 0.59705 + 1.31039I$	$-7.22620 + 5.83293I$	$-6.15082 - 5.68855I$
$a = -0.388554 + 0.940654I$		
$b = -1.11302 + 1.53684I$		
$u = 0.609332 - 1.155207I$	$-4.80243 - 5.41014I$	$-7.26346 + 0.72558I$
$a = 0.327103 + 1.005163I$		
$b = 1.35350 + 1.27843I$		
$u = 0.609332 + 1.155207I$	$-4.80243 + 5.41014I$	$-7.26346 - 0.72558I$
$a = 0.327103 - 1.005163I$		
$b = 1.35350 - 1.27843I$		

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.614621 - 1.121983I$ $a = -0.366269 + 0.769880I$ $b = 1.04552 + 1.57884I$	$-3.19452 - 11.57247I$	$-4.62517 + 9.19158I$
$u = 0.614621 + 1.121983I$ $a = -0.366269 - 0.769880I$ $b = 1.04552 - 1.57884I$	$-3.19452 + 11.57247I$	$-4.62517 - 9.19158I$
$u = 0.651335 - 0.521113I$ $a = 0.651925 - 0.264644I$ $b = -0.296598 - 1.181027I$	$2.41607 + 1.66211I$	$3.86075 - 3.01699I$
$u = 0.651335 + 0.521113I$ $a = 0.651925 + 0.264644I$ $b = -0.296598 + 1.181027I$	$2.41607 - 1.66211I$	$3.86075 + 3.01699I$
$u = 0.834732 - 0.404612I$ $a = -0.915701 + 0.531066I$ $b = 0.002299 + 1.151678I$	$-1.04725 + 6.18742I$	$-1.76655 - 5.50914I$
$u = 0.834732 + 0.404612I$ $a = -0.915701 - 0.531066I$ $b = 0.002299 - 1.151678I$	$-1.04725 - 6.18742I$	$-1.76655 + 5.50914I$
$u = 0.838953 - 0.988789I$ $a = 0.585981 + 0.864643I$ $b = 1.078270 + 0.536662I$	$-4.06336 - 5.47241I$	$-0.38615 + 5.26925I$
$u = 0.838953 + 0.988789I$ $a = 0.585981 - 0.864643I$ $b = 1.078270 - 0.536662I$	$-4.06336 + 5.47241I$	$-0.38615 - 5.26925I$
$u = 0.840708 - 0.557697I$ $a = -1.122850 - 0.716168I$ $b = -0.978982 + 0.131303I$	$-2.78766 - 0.58394I$	$-2.05211 + 2.44149I$
$u = 0.840708 + 0.557697I$ $a = -1.122850 + 0.716168I$ $b = -0.978982 - 0.131303I$	$-2.78766 + 0.58394I$	$-2.05211 - 2.44149I$
Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.880421$ $a = -1.27930$ $b = -0.248247$	-1.79480	-8.89994
$u = 1.05938$ $a = 1.33817$ $b = 0.192189$	-3.29623	-2.05434

III. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1	$(u^{13} - u^{12} + \dots - u - 1)(u^{72} + 17u^{70} + \dots + u + 1)$
c_2	$(u^{13} + 7u^{12} + \dots - 5u - 1)(u^{72} + 34u^{71} + \dots + 11u + 1)$
c_3	$(u^{13} + u^{12} - u^{11} - 5u^{10} - 2u^9 + u^8 + u^7 - u^6 + 3u^5 + 3u^4 + u^3 - u^2 - u - 1)$ $(u^{72} + 6u^{71} + \dots + 50529u + 18761)$
c_4	$(u^{13} + u^{12} + \dots - u - 1)(u^{72} + 2u^{71} + \dots + 17u - 1)$
c_5	$(u^{13} + u^{12} + \dots - u + 1)(u^{72} + 17u^{70} + \dots + u + 1)$
c_6	$(u^{13} + 2u^{12} + \dots - 7u^2 + 1)(u^{72} + u^{71} + \dots - 704u + 121)$
c_7	$(u^{13} - u^{12} + \dots - u + 1)(u^{72} + 2u^{71} + \dots + 17u - 1)$
c_8	$(u^{13} - u^{12} + \dots - u + 1)(u^{72} + 2u^{71} + \dots + 17u - 1)$
c_9	$(u^{13} - u^{12} + u^{11} + u^{10} - 3u^9 + 3u^8 + u^7 + u^6 - u^5 - 2u^4 + 5u^3 - u^2 - u + 1)$ $(u^{72} + 2u^{71} + \dots + 25u - 1)$
c_{10}	$(u^{13} - 2u^{12} + \dots + 7u^2 - 1)(u^{72} + u^{71} + \dots - 704u + 121)$
c_{11}	$(u^{13} + u^{12} + \dots + 3u - 1)(u^{72} + 12u^{71} + \dots - 916u - 88)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_5	$(y^{13} + 7y^{12} + \dots - 5y - 1)(y^{72} + 34y^{71} + \dots + 11y + 1)$
c_2	$(y^{13} + 3y^{12} + \dots - 13y - 1)(y^{72} + 14y^{71} + \dots + 87y + 1)$
c_3	$(y^{13} - 3y^{12} + \dots - y - 1)$ $(y^{72} + 28y^{71} + \dots + 9764167099y + 351975121)$
c_4	$(y^{13} - 15y^{12} + \dots + 3y - 1)(y^{72} - 76y^{71} + \dots - 13y + 1)$
c_6	$(y^{13} - 14y^{12} + \dots + 14y - 1)(y^{72} - 59y^{71} + \dots - 471900y + 14641)$
c_7	$(y^{13} - 15y^{12} + \dots + 3y - 1)(y^{72} - 76y^{71} + \dots - 13y + 1)$
c_8	$(y^{13} - 15y^{12} + \dots + 3y - 1)(y^{72} - 76y^{71} + \dots - 13y + 1)$
c_9	$(y^{13} + y^{12} + \dots + 3y - 1)(y^{72} + 4y^{71} + \dots - 33y + 1)$
c_{10}	$(y^{13} - 14y^{12} + \dots + 14y - 1)(y^{72} - 59y^{71} + \dots - 471900y + 14641)$
c_{11}	$(y^{13} + y^{12} + \dots + 3y - 1)(y^{72} + 8y^{71} + \dots + 92336y + 7744)$