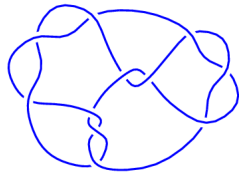
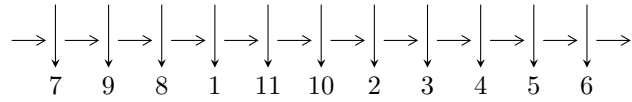


11a<sub>356</sub> (K11a<sub>356</sub>)

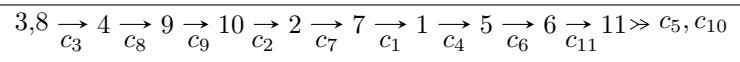


1

**Arc Sequences**



**Solving Sequence**



**Representation Ideals**

$$I = I_1^u$$

$$I_1^u = \langle u^{39} - u^{38} + \dots - 2u - 1 \rangle$$

There are 1 irreducible components with 39 representations.

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

$$\text{I. } I_1^u = \langle u^{39} - u^{38} + \dots - 2u - 1 \rangle$$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^5 + 2u^3 + u \\ -u^5 - u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^8 - 3u^6 - 3u^4 + 1 \\ u^8 + 2u^6 - 2u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^{18} - 7u^{16} - 20u^{14} - 27u^{12} - 11u^{10} + 13u^8 + 14u^6 - 3u^2 + 1 \\ u^{18} + 6u^{16} + 13u^{14} + 8u^{12} - 11u^{10} - 16u^8 + 6u^4 + u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{13} - 6u^{11} - 13u^9 - 10u^7 + 4u^5 + 8u^3 + u \\ -u^{15} - 5u^{13} - 8u^{11} - u^9 + 8u^7 + 2u^5 - 4u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^{36} + 15u^{34} + \dots - u^2 + 1 \\ u^{38} + 14u^{36} + \dots + 6u^4 - 3u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^{36} + 15u^{34} + \dots - u^2 + 1 \\ u^{38} + 14u^{36} + \dots + 6u^4 - 3u^2 \end{pmatrix}$$

(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             |
|-----------------------------|---------------------------------------|------------------------|
| $u = -0.870700$             | -12.5889                              | -20.2660               |
| $u = -0.840218 - 0.059790I$ | $-3.40399 - 3.95494I$                 | $-12.75445 + 3.98902I$ |
| $u = -0.840218 + 0.059790I$ | $-3.40399 + 3.95494I$                 | $-12.75445 - 3.98902I$ |
| $u = -0.492543 - 0.335168I$ | $-2.04249 - 4.99221I$                 | $-14.0623 + 7.3168I$   |
| $u = -0.492543 + 0.335168I$ | $-2.04249 + 4.99221I$                 | $-14.0623 - 7.3168I$   |
| $u = -0.407478 - 1.273379I$ | $-8.63550 - 4.57833I$                 | $-16.5882 + 3.2538I$   |
| $u = -0.407478 + 1.273379I$ | $-8.63550 + 4.57833I$                 | $-16.5882 - 3.2538I$   |
| $u = -0.383266 - 1.213818I$ | $0.146925 - 0.444639I$                | $-9.41731 - 0.59689I$  |
| $u = -0.383266 + 1.213818I$ | $0.146925 + 0.444639I$                | $-9.41731 + 0.59689I$  |
| $u = -0.378228 - 1.313412I$ | $0.88961 - 8.33524I$                  | $-8.46162 + 6.44444I$  |
| $u = -0.378228 + 1.313412I$ | $0.88961 + 8.33524I$                  | $-8.46162 - 6.44444I$  |
| $u = -0.317690 - 0.458841I$ | $-1.46078 + 1.97639I$                 | $-11.86139 + 0.45941I$ |
| $u = -0.317690 + 0.458841I$ | $-1.46078 - 1.97639I$                 | $-11.86139 - 0.45941I$ |
| $u = -0.296485$             | -0.479709                             | -20.6443               |
| $u = -0.153420 - 1.344442I$ | $3.18314 - 7.20185I$                  | $-8.30980 + 6.60092I$  |
| $u = -0.153420 + 1.344442I$ | $3.18314 + 7.20185I$                  | $-8.30980 - 6.60092I$  |
| $u = -0.091582 - 1.340426I$ | $3.95422 + 0.66385I$                  | $-6.81341 - 0.21529I$  |
| $u = -0.091582 + 1.340426I$ | $3.95422 - 0.66385I$                  | $-6.81341 + 0.21529I$  |
| $u = -0.062866 - 1.207988I$ | $2.96167 - 1.25323I$                  | $-8.48961 + 5.22711I$  |
| $u = -0.062866 + 1.207988I$ | $2.96167 + 1.25323I$                  | $-8.48961 - 5.22711I$  |
| $u = 0.126262 - 1.340795I$  | $7.43974 + 3.24701I$                  | $-3.23245 - 3.90104I$  |
| $u = 0.126262 + 1.340795I$  | $7.43974 - 3.24701I$                  | $-3.23245 + 3.90104I$  |
| $u = 0.184373 - 1.113279I$  | $-1.87456 + 2.88869I$                 | $-14.2614 - 3.8496I$   |
| $u = 0.184373 + 1.113279I$  | $-1.87456 - 2.88869I$                 | $-14.2614 + 3.8496I$   |
| $u = 0.362109 - 1.293344I$  | $-1.59442 + 4.32741I$                 | $-11.59101 - 2.45124I$ |
| $u = 0.362109 + 1.293344I$  | $-1.59442 - 4.32741I$                 | $-11.59101 + 2.45124I$ |
| $u = 0.366310 - 1.256216I$  | $-1.87897 + 4.14984I$                 | $-12.49254 - 4.42068I$ |
| $u = 0.366310 + 1.256216I$  | $-1.87897 - 4.14984I$                 | $-12.49254 + 4.42068I$ |
| $u = 0.389378 - 1.319714I$  | $-4.01328 + 12.31499I$                | $-12.9972 - 7.6973I$   |
| $u = 0.389378 + 1.319714I$  | $-4.01328 - 12.31499I$                | $-12.9972 + 7.6973I$   |

| Solution to $I_1^u$        | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape            |
|----------------------------|---------------------------------------|-----------------------|
| $u = 0.407915 - 1.208985I$ | $-4.82928 - 3.28352I$                 | $-14.1252 + 1.7536I$  |
| $u = 0.407915 + 1.208985I$ | $-4.82928 + 3.28352I$                 | $-14.1252 - 1.7536I$  |
| $u = 0.409039 - 0.362185I$ | $2.19576 + 1.42469I$                  | $-7.96461 - 5.04290I$ |
| $u = 0.409039 + 0.362185I$ | $2.19576 - 1.42469I$                  | $-7.96461 + 5.04290I$ |
| $u = 0.582761$             | -5.05980                              | -19.3550              |
| $u = 0.814161 - 0.022766I$ | $-5.70205 + 0.09754I$                 | $-16.2351 + 0.6362I$  |
| $u = 0.814161 + 0.022766I$ | $-5.70205 - 0.09754I$                 | $-16.2351 - 0.6362I$  |
| $u = 0.859957 - 0.065950I$ | $-8.34775 + 7.83020I$                 | $-17.2097 - 5.1907I$  |
| $u = 0.859957 + 0.065950I$ | $-8.34775 - 7.83020I$                 | $-17.2097 + 5.1907I$  |

## II. u-Polynomials

| Crossings             | u-Polynomials at each crossings       |
|-----------------------|---------------------------------------|
| $c_1, c_7, c_9$       | $(u^{39} + u^{38} + \dots - 26u - 5)$ |
| $c_2, c_3, c_8$       | $(u^{39} + u^{38} + \dots - 2u + 1)$  |
| $c_4, c_6$            | $(u^{39} + 3u^{38} + \dots - 4u - 1)$ |
| $c_5, c_{10}, c_{11}$ | $(u^{39} + u^{38} + \dots - 2u + 1)$  |

### III. Riley Polynomials

| Crossings             | Riley Polynomials at each crossings       |
|-----------------------|---|
| $c_1, c_7, c_9$       | $(y^{39} - 37y^{38} + \dots + 276y - 25)$ |
| $c_2, c_3, c_8$       | $(y^{39} + 31y^{38} + \dots + 12y - 1)$   |
| $c_4, c_6$            | $(y^{39} + 19y^{38} + \dots + 12y - 1)$   |
| $c_5, c_{10}, c_{11}$ | $(y^{39} - 33y^{38} + \dots + 12y - 1)$   |