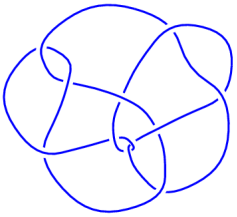
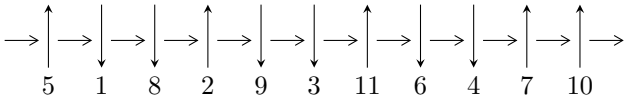
$11a_{30}$ $(K11a_{30})$



[1]

Arc Sequences



Solving Sequence

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

Representation Ideals

$$I = I_1^u$$

$$I_1^u = \langle u^{74} - u^{73} + \cdots - u + 1,\ 4.32400 \times 10^{95} u^{73} - 9.45395 \times 10^{96} u^{72} + \cdots + 1.65961 \times 10^{97} b - 2.98615 \times 10^{96},$$
$$4.35536 \times 10^{96} u^{73} - 4.61345 \times 10^{96} u^{72} + \cdots + 1.65961 \times 10^{97} a - 1.06770 \times 10^{98} \rangle$$

There are 1 irreducible components with 74 representations.

[1] The knot diagram image is adapter from "C. Livingston and A. H. Moore, KnotInfo: Table of Knot Invariants, http://www.indiana.edu/ knotinfo"

I.

$$\boldsymbol{I_1^u = \langle u^{74}-u^{73}+\cdots-u+1,\ 4.32\times10^{95}u^{73}-9.45\times10^{96}u^{72}+\cdots+1.66\times10^{97}b-2.99\times10^{96},\ 4.36\times10^{96}u^{73}-4.61\times10^{96}u^{72}+\cdots+1.66\times10^{97}a-1.07\times10^{98}\rangle}$$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix}-0.262433u^{73}+0.277984u^{72}+\cdots+4.20161u+6.43344\\-0.0260543u^{73}+0.569649u^{72}+\cdots-4.90850u+0.179931\end{pmatrix}$$

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

$$a_6 = \begin{pmatrix}-1.59709u^{73}+1.16339u^{72}+\cdots-39.5769u-0.0893345\\-1.21741u^{73}+2.88944u^{72}+\cdots-1.39171u-0.357875\end{pmatrix}$$

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

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

$$a_7 = \begin{pmatrix}-1.85321u^{73}+1.94769u^{72}+\cdots-42.5439u+2.50419\\-0.972093u^{73}+2.19919u^{72}+\cdots+1.17531u-1.57417\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-u\\u\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}0.200805u^{73}+0.121306u^{72}+\cdots+3.35398u+6.99258\\-0.489292u^{73}+0.726327u^{72}+\cdots-4.06086u-0.379215\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.801512u^{73}-0.694390u^{72}+\cdots+6.87747u-2.86929\\-0.390085u^{73}+0.133844u^{72}+\cdots+1.37339u+0.694390\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-2.04691u^{73}+0.431599u^{72}+\cdots-29.2718u+1.94790\\1.26728u^{73}-0.544088u^{72}+\cdots-0.654202u+0.356501\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-2.04691u^{73}+0.431599u^{72}+\cdots-29.2718u+1.94790\\1.26728u^{73}-0.544088u^{72}+\cdots-0.654202u+0.356501\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.121611-0.263459I$ $a=-0.222523-1.038980I$ $b=\ \ 0.002619+0.200358I$	$6.19874-1.17606I$	$10.59937+1.67709I$
$u=-1.121611+0.263459I$ $a=-0.222523+1.038980I$ $b=\ \ 0.002619-0.200358I$	$6.19874+1.17606I$	$10.59937-1.67709I$
$u=-1.109803-0.659392I$ $a=-0.437073-0.837400I$ $b=\ \ 0.138113+0.485863I$	$5.77201+4.94079I$	$9.17638-7.24375I$
$u=-1.109803+0.659392I$ $a=-0.437073+0.837400I$ $b=\ \ 0.138113-0.485863I$	$5.77201-4.94079I$	$9.17638+7.24375I$
$u=-0.905631-0.988625I$ $a=\ \ 0.590751+0.662829I$ $b=-0.429428-1.031633I$	$4.76292+2.16296I$	$7.99562-3.01601I$
$u=-0.905631+0.988625I$ $a=\ \ 0.590751-0.662829I$ $b=-0.429428+1.031633I$	$4.76292-2.16296I$	$7.99562+3.01601I$
$u=-0.812545-0.520379I$ $a=\ \ 0.628344+1.058319I$ $b=\ \ 0.309170-0.421126I$	$3.70932+1.58303I$	$3.09879-2.53504I$
$u=-0.812545+0.520379I$ $a=\ \ 0.628344-1.058319I$ $b=\ \ 0.309170+0.421126I$	$3.70932-1.58303I$	$3.09879+2.53504I$
$u=-0.76722-1.25365I$ $a=\ \ 0.617182+0.526672I$ $b=-0.93702-1.13846I$	$3.27619+7.91420I$	$4.41049-10.44384I$
$u=-0.76722+1.25365I$ $a=\ \ 0.617182-0.526672I$ $b=-0.93702+1.13846I$	$3.27619-7.91420I$	$4.41049+10.44384I$

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.636273-0.871096I$ $a=\ \ 0.030056+0.299044I$ $b=-0.910875+0.038382I$	$0.979140+0.794104I$	$-4.88709+0.51596I$
$u=-0.636273+0.871096I$ $a=\ \ 0.030056-0.299044I$ $b=-0.910875-0.038382I$	$0.979140-0.794104I$	$-4.88709-0.51596I$
$u=-0.613032-1.148643I$ $a=-0.694678-0.534302I$ $b=\ \ 1.05655+1.43473I$	$1.81406+3.75257I$	$0.74412-4.43411I$
$u=-0.613032+1.148643I$ $a=-0.694678+0.534302I$ $b=\ \ 1.05655-1.43473I$	$1.81406-3.75257I$	$0.74412+4.43411I$
$u=-0.611740-0.677389I$ $a=-0.192765-0.428569I$ $b=\ \ 0.979625-0.589896I$	$1.44361+4.12461I$	$-1.60848-8.74026I$
$u=-0.611740+0.677389I$ $a=-0.192765+0.428569I$ $b=\ \ 0.979625+0.589896I$	$1.44361-4.12461I$	$-1.60848+8.74026I$
$u=-0.549545-1.067760I$ $a=-0.098301+0.313585I$ $b=-0.908011-0.651294I$	$-0.22924+5.70067I$	$-3.12131-5.75856I$
$u=-0.549545+1.067760I$ $a=-0.098301-0.313585I$ $b=-0.908011+0.651294I$	$-0.22924-5.70067I$	$-3.12131+5.75856I$
$u=-0.488379-0.853979I$ $a=\ \ 0.938103+0.514390I$ $b=\ \ 8.04702-0.06024I$	$1.62217-0.05885I$	$14.9771-62.8852I$
$u=-0.488379+0.853979I$ $a=\ \ 0.938103-0.514390I$ $b=\ \ 8.04702+0.06024I$	$1.62217+0.05885I$	$14.9771+62.8852I$

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.473139-0.843516I$ $a=-0.798846-0.503636I$ $b=\ \ 5.47585-1.27838I$	$1.60692+3.97998I$	$10.4876-34.2104I$
$u=-0.473139+0.843516I$ $a=-0.798846+0.503636I$ $b=\ \ 5.47585+1.27838I$	$1.60692-3.97998I$	$10.4876+34.2104I$
$u=-0.448860-1.081111I$ $a=-0.762825-0.513583I$ $b=\ \ 1.57068+1.47211I$	$1.70570+3.66146I$	$3.73929-3.91918I$
$u=-0.448860+1.081111I$ $a=-0.762825+0.513583I$ $b=\ \ 1.57068-1.47211I$	$1.70570-3.66146I$	$3.73929+3.91918I$
$u=-0.427892-1.048719I$ $a=\ \ 0.168193-0.308901I$ $b=\ \ 0.636805+0.850694I$	$-1.13505+1.41023I$	$-4.53209-0.05631I$
$u=-0.427892+1.048719I$ $a=\ \ 0.168193+0.308901I$ $b=\ \ 0.636805-0.850694I$	$-1.13505-1.41023I$	$-4.53209+0.05631I$
$u=-0.395146-0.549899I$ $a=-0.881591-0.288726I$ $b=\ \ 0.25079-1.50544I$	$1.52579-1.41180I$	$0.43215+2.14680I$
$u=-0.395146+0.549899I$ $a=-0.881591+0.288726I$ $b=\ \ 0.25079+1.50544I$	$1.52579+1.41180I$	$0.43215-2.14680I$
$u=-0.372530-0.824350I$ $a=\ \ 0.385723-0.096201I$ $b=-0.040074+0.883619I$	$-0.30697+1.55903I$	$-1.96359-5.08447I$
$u=-0.372530+0.824350I$ $a=\ \ 0.385723+0.096201I$ $b=-0.040074-0.883619I$	$-0.30697-1.55903I$	$-1.96359+5.08447I$

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.331910-0.162106I$ $a=-0.15182-1.49705I$ $b=\ \ 0.567616-0.789428I$	$1.59490-1.49760I$	$1.53502+0.67981I$
$u=-0.331910+0.162106I$ $a=-0.15182+1.49705I$ $b=\ \ 0.567616+0.789428I$	$1.59490+1.49760I$	$1.53502-0.67981I$
$u=-0.076509-1.358079I$ $a=-0.813568-0.334633I$ $b=\ \ 1.22164+0.97777I$	$-1.83044+8.58305I$	$-1.84029-8.84239I$
$u=-0.076509+1.358079I$ $a=-0.813568+0.334633I$ $b=\ \ 1.22164-0.97777I$	$-1.83044-8.58305I$	$-1.84029+8.84239I$
$u=-0.002331-1.262767I$ $a=\ \ 0.871152+0.342368I$ $b=-1.20966-0.89105I$	$-3.04551+3.42311I$	$-4.75978-3.23100I$
$u=-0.002331+1.262767I$ $a=\ \ 0.871152-0.342368I$ $b=-1.20966+0.89105I$	$-3.04551-3.42311I$	$-4.75978+3.23100I$
$u=\ \ 0.044485-0.183329I$ $a=\ \ 6.06256-0.92178I$ $b=\ \ 0.221183+0.916092I$	$1.47076+2.21494I$	$-0.98118-4.30242I$
$u=\ \ 0.044485+0.183329I$ $a=\ \ 6.06256+0.92178I$ $b=\ \ 0.221183-0.916092I$	$1.47076-2.21494I$	$-0.98118+4.30242I$
$u=\ \ 0.088093-1.145906I$ $a=\ \ 0.159324-0.672962I$ $b=\ \ 0.32644+1.66783I$	$-4.54644+4.33882I$	$-6.72843-3.56231I$
$u=\ \ 0.088093+1.145906I$ $a=\ \ 0.159324+0.672962I$ $b=\ \ 0.32644-1.66783I$	$-4.54644-4.33882I$	$-6.72843+3.56231I$

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.155697 - 0.809103I$ $a = 1.104598 + 0.560997I$ $b = -1.036572 - 0.481405I$	$-1.13641 + 1.44571I$	$-6.07290 - 4.28126I$
$u = 0.155697 + 0.809103I$ $a = 1.104598 - 0.560997I$ $b = -1.036572 + 0.481405I$	$-1.13641 - 1.44571I$	$-6.07290 + 4.28126I$
$u = 0.196875 - 1.092949I$ $a = -0.130987 + 0.790036I$ $b = -0.21874 - 1.72634I$	$-5.52578 - 1.17971I$	$-8.59982 + 2.15292I$
$u = 0.196875 + 1.092949I$ $a = -0.130987 - 0.790036I$ $b = -0.21874 + 1.72634I$	$-5.52578 + 1.17971I$	$-8.59982 - 2.15292I$
$u = 0.510315 - 0.716522I$ $a = 1.64068 - 0.79700I$ $b = -0.442165 + 0.797520I$	$1.85423 + 1.80714I$	$3.40155 - 8.09072I$
$u = 0.510315 + 0.716522I$ $a = 1.64068 + 0.79700I$ $b = -0.442165 - 0.797520I$	$1.85423 - 1.80714I$	$3.40155 + 8.09072I$
$u = 0.558020 - 1.039771I$ $a = 0.371930 + 0.928956I$ $b = -0.11445 - 1.79925I$	$-3.26838 - 5.57628I$	$-5.30278 + 6.93314I$
$u = 0.558020 + 1.039771I$ $a = 0.371930 - 0.928956I$ $b = -0.11445 + 1.79925I$	$-3.26838 + 5.57628I$	$-5.30278 - 6.93314I$
$u = 0.564206 - 0.338491I$ $a = 1.220332 + 0.384292I$ $b = -0.144799 - 0.374435I$	$-1.47671 + 1.08782I$	$-3.50377 - 1.91086I$
$u = 0.564206 + 0.338491I$ $a = 1.220332 - 0.384292I$ $b = -0.144799 + 0.374435I$	$-1.47671 - 1.08782I$	$-3.50377 + 1.91086I$

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.570967 - 0.950116I$ $a = -0.91441 + 1.18652I$ $b = 0.92763 - 2.05370I$	$1.08144 - 6.25961I$	$0.32390 + 13.01064I$
$u = 0.570967 + 0.950116I$ $a = -0.91441 - 1.18652I$ $b = 0.92763 + 2.05370I$	$1.08144 + 6.25961I$	$0.32390 - 13.01064I$
$u = 0.585176 - 0.803100I$ $a = 0.60243 - 1.46525I$ $b = -0.75264 + 1.92459I$	$3.48567 + 0.24626I$	$11.31963 - 1.81493I$
$u = 0.585176 + 0.803100I$ $a = 0.60243 + 1.46525I$ $b = -0.75264 - 1.92459I$	$3.48567 - 0.24626I$	$11.31963 + 1.81493I$
$u = 0.589516 - 0.882245I$ $a = -1.56789 + 0.34750I$ $b = 0.860787 - 0.039906I$	$3.23570 - 4.91684I$	$9.8919 + 10.1988I$
$u = 0.589516 + 0.882245I$ $a = -1.56789 - 0.34750I$ $b = 0.860787 + 0.039906I$	$3.23570 + 4.91684I$	$9.8919 - 10.1988I$
$u = 0.611725 - 0.837729I$ $a = -0.875570 - 0.894468I$ $b = 0.34146 + 1.40169I$	$3.80887 - 2.41257I$	$10.33536 + 3.40648I$
$u = 0.611725 + 0.837729I$ $a = -0.875570 + 0.894468I$ $b = 0.34146 - 1.40169I$	$3.80887 + 2.41257I$	$10.33536 - 3.40648I$
$u = 0.625155 - 1.073364I$ $a = -0.410883 - 0.817940I$ $b = 0.04353 + 1.78016I$	$-1.05098 - 11.53105I$	$-1.83642 + 9.20826I$
$u = 0.625155 + 1.073364I$ $a = -0.410883 + 0.817940I$ $b = 0.04353 - 1.78016I$	$-1.05098 + 11.53105I$	$-1.83642 - 9.20826I$

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.673568 - 1.112396I$ $a = -0.715460 + 0.904800I$ $b = \ 1.08948 - 2.19861I$	$1.50429 - 11.48101I$	$-1.18871 + 6.59783I$
$u = \ 0.673568 + 1.112396I$ $a = -0.715460 - 0.904800I$ $b = \ 1.08948 + 2.19861I$	$1.50429 + 11.48101I$	$-1.18871 - 6.59783I$
$u = \ 0.706951 - 1.138362I$ $a = \ 0.674279 - 0.879423I$ $b = -1.14666 + 2.21749I$	$3.5208 - 17.3478I$	$1.07995 + 10.16949I$
$u = \ 0.706951 + 1.138362I$ $a = \ 0.674279 + 0.879423I$ $b = -1.14666 - 2.21749I$	$3.5208 + 17.3478I$	$1.07995 - 10.16949I$
$u = \ 0.710205 - 1.019159I$ $a = \ 0.666032 - 1.023387I$ $b = -1.09114 + 2.06332I$	$8.07842 - 8.92677I$	$5.13032 + 6.83901I$
$u = \ 0.710205 + 1.019159I$ $a = \ 0.666032 + 1.023387I$ $b = -1.09114 - 2.06332I$	$8.07842 + 8.92677I$	$5.13032 - 6.83901I$
$u = \ 0.755320 - 0.469376I$ $a = -1.005175 - 0.403721I$ $b = -0.071149 + 0.645113I$	$0.70694 + 6.29193I$	$0.55857 - 5.25705I$
$u = \ 0.755320 + 0.469376I$ $a = -1.005175 + 0.403721I$ $b = -0.071149 - 0.645113I$	$0.70694 - 6.29193I$	$0.55857 + 5.25705I$
$u = \ 0.838266 - 0.662306I$ $a = -1.140685 + 0.784534I$ $b = -0.041929 - 0.162630I$	$9.17547 + 3.15433I$	$7.10171 - 1.44147I$
$u = \ 0.838266 + 0.662306I$ $a = -1.140685 - 0.784534I$ $b = -0.041929 + 0.162630I$	$9.17547 - 3.15433I$	$7.10171 + 1.44147I$

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.888102 - 0.494344I$ $a = 1.017387 - 0.975910I$ $b = 0.295779 + 0.300052I$	$3.37758 + 5.71754I$	$1.13248 - 2.59386I$
$u = 0.888102 + 0.494344I$ $a = 1.017387 + 0.975910I$ $b = 0.295779 - 0.300052I$	$3.37758 - 5.71754I$	$1.13248 + 2.59386I$
$u = 0.971458 - 0.512667I$ $a = -0.934005 + 0.914018I$ $b = -0.367441 - 0.193909I$	$5.45791 + 11.23757I$	$3.45535 - 6.48717I$
$u = 0.971458 + 0.512667I$ $a = -0.934005 - 0.914018I$ $b = -0.367441 + 0.193909I$	$5.45791 - 11.23757I$	$3.45535 + 6.48717I$

II. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1, c_4	$(u^{74}+u^{73}+\cdots+u+1)$
c_2	$(u^{74}+29u^{73}+\cdots+57u+1)$
c_3	$(u^{74}+u^{73}+\cdots+11u+1)$
c_5	$(u^{74}+5u^{73}+\cdots+3u+1)$
c_6	$(u^{74}+5u^{73}+\cdots+355u+199)$
c_7	$(u^{74}+5u^{73}+\cdots+3u+1)$
c_8	$(u^{74}+5u^{73}+\cdots+3u+1)$
c_9	$(u^{74}+15u^{73}+\cdots-10283u+547)$
c_{10}	$(u^{74}+5u^{73}+\cdots+3u+1)$
c_{11}	$(u^{74}+31u^{73}+\cdots-5u+1)$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_4	$(y^{74} + 29y^{73} + \cdots + 57y + 1)$
c_2	$(y^{74} + 33y^{73} + \cdots - 859y + 1)$
c_3	$(y^{74} + 5y^{73} + \cdots + 33y + 1)$
c_5	$(y^{74} + 53y^{73} + \cdots + 5y + 1)$
c_6	$(y^{74} - 63y^{73} + \cdots + 1039717y + 39601)$
c_7	$(y^{74} - 31y^{73} + \cdots + 5y + 1)$
c_8	$(y^{74} + 53y^{73} + \cdots + 5y + 1)$
c_9	$(y^{74} + 105y^{73} + \cdots - 37429635y + 299209)$
c_{10}	$(y^{74} - 31y^{73} + \cdots + 5y + 1)$
c_{11}	$(y^{74} + 25y^{73} + \cdots + 5y + 1)$