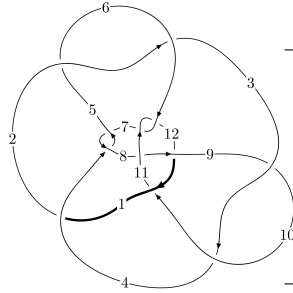
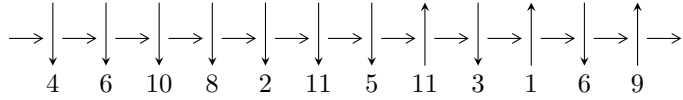


12n₀₇₉₁ (K12n₀₇₉₁)



A knot diagram¹

Linearized knot diagram



Solving Sequence

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

Ideals for irreducible components² of X_{par}

$$I_1^u = \langle 3.33940 \times 10^{221} u^{77} + 3.62622 \times 10^{220} u^{76} + \dots + 1.11812 \times 10^{223} b + 2.16286 \times 10^{224}, \\ 1.25797 \times 10^{224} u^{77} + 2.59631 \times 10^{223} u^{76} + \dots + 7.97223 \times 10^{225} a - 1.18016 \times 10^{227}, \\ u^{78} - u^{77} + \dots + 7307u - 713 \rangle$$

$$I_2^u = \langle 9.42636 \times 10^{15} u^{31} - 1.03650 \times 10^{16} u^{30} + \dots + 2.60834 \times 10^{15} b + 8.63306 \times 10^{16}, \\ - 8.60928 \times 10^{16} u^{31} + 1.00029 \times 10^{17} u^{30} + \dots + 2.86917 \times 10^{16} a - 1.03993 \times 10^{18}, \\ u^{32} - 12u^{30} + \dots + 14u + 11 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 110 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>).

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

$$\mathbf{I. } I_1^u = \langle 3.34 \times 10^{221}u^{77} + 3.63 \times 10^{220}u^{76} + \dots + 1.12 \times 10^{223}b + 2.16 \times 10^{224}, 1.26 \times 10^{224}u^{77} + 2.60 \times 10^{223}u^{76} + \dots + 7.97 \times 10^{225}a - 1.18 \times 10^{227}, u^{78} - u^{77} + \dots + 7307u - 713 \rangle$$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -0.0157793u^{77} - 0.00325669u^{76} + \dots - 26.8738u + 14.8034 \\ -0.0298661u^{77} - 0.00324312u^{76} + \dots + 175.664u - 19.3436 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0121080u^{77} - 0.0122585u^{76} + \dots - 260.939u + 42.1759 \\ 0.0127688u^{77} + 0.000485058u^{76} + \dots - 101.992u + 11.9796 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0248767u^{77} - 0.0117734u^{76} + \dots - 362.931u + 54.1555 \\ 0.0127688u^{77} + 0.000485058u^{76} + \dots - 101.992u + 11.9796 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0150625u^{77} - 0.0141531u^{76} + \dots - 304.583u + 44.1204 \\ 0.00161713u^{77} + 0.00303149u^{76} + \dots + 21.4007u - 5.05900 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.117342u^{77} + 0.0172410u^{76} + \dots + 835.872u - 90.0394 \\ -0.0229477u^{77} - 0.00152551u^{76} + \dots + 164.335u - 20.6918 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0594370u^{77} - 0.0231347u^{76} + \dots - 617.741u + 82.9433 \\ 0.00163959u^{77} - 0.00205736u^{76} + \dots - 58.1641u + 9.02172 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0839403u^{77} + 0.00200465u^{76} + \dots + 589.203u - 61.4125 \\ -0.00229897u^{77} - 0.00218375u^{76} + \dots - 22.8424u + 5.75187 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.00354460u^{77} - 0.0181944u^{76} + \dots - 257.161u + 43.8462 \\ 0.0257467u^{77} + 0.00283761u^{76} + \dots - 183.805u + 21.4583 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $0.0607658u^{77} - 0.0336953u^{76} + \dots - 399.330u + 14.9628$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{78} - 9u^{77} + \dots - 30111u - 3476$
c_2, c_5	$u^{78} + u^{77} + \dots + 25u - 1$
c_3, c_9	$u^{78} - u^{77} + \dots + 7307u - 713$
c_4, c_7	$u^{78} - 5u^{77} + \dots + 20u - 1$
c_6, c_{11}	$u^{78} + 3u^{77} + \dots - 734300u + 685471$
c_8	$u^{78} + 5u^{77} + \dots + 107670903u + 34552577$
c_{10}	$u^{78} + u^{77} + \dots + 729u + 31$
c_{12}	$u^{78} - 3u^{77} + \dots + 5399717u + 801148$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{78} - 27y^{77} + \dots + 17262383y + 12082576$
c_2, c_5	$y^{78} - 73y^{77} + \dots + 105y + 1$
c_3, c_9	$y^{78} - 67y^{77} + \dots - 15851373y + 508369$
c_4, c_7	$y^{78} + 17y^{77} + \dots - 408y + 1$
c_6, c_{11}	$y^{78} - 83y^{77} + \dots - 10360427562352y + 469870491841$
c_8	$y^{78} + 69y^{77} + \dots - 21520300962268511y + 1193880577340929$
c_{10}	$y^{78} + 5y^{77} + \dots - 120505y + 961$
c_{12}	$y^{78} + 73y^{77} + \dots - 7450965034177y + 641838117904$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.942844 + 0.058139I$ $a = 0.387472 + 0.733615I$ $b = -0.195034 + 0.610856I$	$3.47891 - 1.49180I$	$-6.00000 + 0.I$
$u = 0.942844 - 0.058139I$ $a = 0.387472 - 0.733615I$ $b = -0.195034 - 0.610856I$	$3.47891 + 1.49180I$	$-6.00000 + 0.I$
$u = -0.233950 + 0.908933I$ $a = -0.417189 - 0.871468I$ $b = -0.705334 - 0.166427I$	$2.67343 + 2.46581I$	$-6.00000 - 7.69832I$
$u = -0.233950 - 0.908933I$ $a = -0.417189 + 0.871468I$ $b = -0.705334 + 0.166427I$	$2.67343 - 2.46581I$	$-6.00000 + 7.69832I$
$u = -1.052020 + 0.174510I$ $a = 0.301022 - 0.112833I$ $b = 0.098599 - 0.266687I$	$-2.28336 + 0.03067I$	0
$u = -1.052020 - 0.174510I$ $a = 0.301022 + 0.112833I$ $b = 0.098599 + 0.266687I$	$-2.28336 - 0.03067I$	0
$u = 0.985202 + 0.543560I$ $a = 0.344444 - 0.317962I$ $b = -0.725802 - 0.187739I$	$1.16693 - 4.65623I$	0
$u = 0.985202 - 0.543560I$ $a = 0.344444 + 0.317962I$ $b = -0.725802 + 0.187739I$	$1.16693 + 4.65623I$	0
$u = 0.512915 + 0.664507I$ $a = -0.019800 - 0.447055I$ $b = -0.502437 + 0.036527I$	$2.57696 - 0.05718I$	$-1.84410 - 0.26283I$
$u = 0.512915 - 0.664507I$ $a = -0.019800 + 0.447055I$ $b = -0.502437 - 0.036527I$	$2.57696 + 0.05718I$	$-1.84410 + 0.26283I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.117457 + 0.796160I$ $a = 0.799606 + 0.362909I$ $b = 1.54042 + 0.31597I$	$-1.82800 - 1.56177I$	$-11.06612 + 4.95728I$
$u = -0.117457 - 0.796160I$ $a = 0.799606 - 0.362909I$ $b = 1.54042 - 0.31597I$	$-1.82800 + 1.56177I$	$-11.06612 - 4.95728I$
$u = 0.788310 + 0.067667I$ $a = 0.34762 + 1.53388I$ $b = -0.222137 + 0.211517I$	$4.10212 + 0.95252I$	$-6.69747 - 11.08186I$
$u = 0.788310 - 0.067667I$ $a = 0.34762 - 1.53388I$ $b = -0.222137 - 0.211517I$	$4.10212 - 0.95252I$	$-6.69747 + 11.08186I$
$u = -1.181570 + 0.296006I$ $a = -1.25923 - 1.88608I$ $b = 1.53208 + 1.70546I$	$-9.81204 + 5.88301I$	0
$u = -1.181570 - 0.296006I$ $a = -1.25923 + 1.88608I$ $b = 1.53208 - 1.70546I$	$-9.81204 - 5.88301I$	0
$u = 0.370228 + 0.671180I$ $a = 0.426280 - 0.076400I$ $b = -0.016730 - 0.393794I$	$1.81907 + 1.89583I$	$1.064668 + 0.345602I$
$u = 0.370228 - 0.671180I$ $a = 0.426280 + 0.076400I$ $b = -0.016730 + 0.393794I$	$1.81907 - 1.89583I$	$1.064668 - 0.345602I$
$u = -0.262253 + 0.715559I$ $a = -0.814627 + 0.211044I$ $b = 1.082170 - 0.442549I$	$-7.06075 - 2.20723I$	$-7.08678 + 2.81313I$
$u = -0.262253 - 0.715559I$ $a = -0.814627 - 0.211044I$ $b = 1.082170 + 0.442549I$	$-7.06075 + 2.20723I$	$-7.08678 - 2.81313I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.115340 + 0.560449I$ $a = -0.169288 - 0.244756I$ $b = -0.165686 + 0.541919I$	$-0.34731 - 6.68579I$	0
$u = 1.115340 - 0.560449I$ $a = -0.169288 + 0.244756I$ $b = -0.165686 - 0.541919I$	$-0.34731 + 6.68579I$	0
$u = 1.228540 + 0.240197I$ $a = -0.702013 - 1.070830I$ $b = 0.51943 + 2.25418I$	$-6.10822 - 3.54460I$	0
$u = 1.228540 - 0.240197I$ $a = -0.702013 + 1.070830I$ $b = 0.51943 - 2.25418I$	$-6.10822 + 3.54460I$	0
$u = 1.262970 + 0.047018I$ $a = 1.55368 - 0.40771I$ $b = -1.53769 + 1.10929I$	$-3.54474 - 4.39179I$	0
$u = 1.262970 - 0.047018I$ $a = 1.55368 + 0.40771I$ $b = -1.53769 - 1.10929I$	$-3.54474 + 4.39179I$	0
$u = -1.191080 + 0.473505I$ $a = -0.103272 + 0.395239I$ $b = 0.250583 + 0.278590I$	$-0.35015 + 2.38063I$	0
$u = -1.191080 - 0.473505I$ $a = -0.103272 - 0.395239I$ $b = 0.250583 - 0.278590I$	$-0.35015 - 2.38063I$	0
$u = -1.277390 + 0.110090I$ $a = -2.20740 - 0.08937I$ $b = 1.97105 - 0.56101I$	$-4.35623 + 3.03953I$	0
$u = -1.277390 - 0.110090I$ $a = -2.20740 + 0.08937I$ $b = 1.97105 + 0.56101I$	$-4.35623 - 3.03953I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.291280 + 0.159820I$ $a = 1.98881 + 1.23832I$ $b = -2.27722 - 1.32574I$	$-11.24160 - 1.94282I$	0
$u = -1.291280 - 0.159820I$ $a = 1.98881 - 1.23832I$ $b = -2.27722 + 1.32574I$	$-11.24160 + 1.94282I$	0
$u = 1.317320 + 0.121357I$ $a = 0.177970 + 1.254660I$ $b = -0.06318 - 2.60422I$	$-5.17676 + 4.17039I$	0
$u = 1.317320 - 0.121357I$ $a = 0.177970 - 1.254660I$ $b = -0.06318 + 2.60422I$	$-5.17676 - 4.17039I$	0
$u = 1.263750 + 0.446195I$ $a = 1.94787 - 0.98680I$ $b = -2.78785 - 0.16314I$	$-1.79519 - 7.98956I$	0
$u = 1.263750 - 0.446195I$ $a = 1.94787 + 0.98680I$ $b = -2.78785 + 0.16314I$	$-1.79519 + 7.98956I$	0
$u = 1.333270 + 0.154113I$ $a = -2.17809 - 0.01089I$ $b = 2.72516 + 0.87884I$	$-6.73250 - 1.36559I$	0
$u = 1.333270 - 0.154113I$ $a = -2.17809 + 0.01089I$ $b = 2.72516 - 0.87884I$	$-6.73250 + 1.36559I$	0
$u = -0.247106 + 1.366830I$ $a = 0.286312 + 0.222429I$ $b = 1.88034 + 0.30072I$	$-8.58231 + 2.86666I$	0
$u = -0.247106 - 1.366830I$ $a = 0.286312 - 0.222429I$ $b = 1.88034 - 0.30072I$	$-8.58231 - 2.86666I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.146469 + 0.591338I$ $a = 1.169670 - 0.079543I$ $b = -1.066960 + 0.481680I$	$-7.60805 + 4.49193I$	$-8.55555 - 2.21842I$
$u = -0.146469 - 0.591338I$ $a = 1.169670 + 0.079543I$ $b = -1.066960 - 0.481680I$	$-7.60805 - 4.49193I$	$-8.55555 + 2.21842I$
$u = 0.297121 + 1.371380I$ $a = -0.371698 - 0.504760I$ $b = -2.17012 - 0.07122I$	$1.90547 + 2.10501I$	0
$u = 0.297121 - 1.371380I$ $a = -0.371698 + 0.504760I$ $b = -2.17012 + 0.07122I$	$1.90547 - 2.10501I$	0
$u = -0.266211 + 1.384610I$ $a = -0.228160 - 0.202664I$ $b = -1.84539 - 0.24540I$	$-7.80585 + 10.06730I$	0
$u = -0.266211 - 1.384610I$ $a = -0.228160 + 0.202664I$ $b = -1.84539 + 0.24540I$	$-7.80585 - 10.06730I$	0
$u = -1.399680 + 0.173379I$ $a = 0.334409 - 0.519138I$ $b = -0.111903 - 0.458529I$	$-8.31581 + 1.61430I$	0
$u = -1.399680 - 0.173379I$ $a = 0.334409 + 0.519138I$ $b = -0.111903 + 0.458529I$	$-8.31581 - 1.61430I$	0
$u = -1.37866 + 0.36295I$ $a = -1.64976 - 0.50953I$ $b = 1.80542 - 0.82492I$	$-6.03995 + 5.96238I$	0
$u = -1.37866 - 0.36295I$ $a = -1.64976 + 0.50953I$ $b = 1.80542 + 0.82492I$	$-6.03995 - 5.96238I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.40559 + 0.25706I$ $a = 1.64134 - 0.25262I$ $b = -1.55258 + 0.17099I$	$-12.6770 - 7.6946I$	0
$u = 1.40559 - 0.25706I$ $a = 1.64134 + 0.25262I$ $b = -1.55258 - 0.17099I$	$-12.6770 + 7.6946I$	0
$u = -1.45079 + 0.18447I$ $a = -0.289984 + 0.565798I$ $b = 0.120076 + 0.470255I$	$-7.53186 + 8.23802I$	0
$u = -1.45079 - 0.18447I$ $a = -0.289984 - 0.565798I$ $b = 0.120076 - 0.470255I$	$-7.53186 - 8.23802I$	0
$u = 0.210864 + 0.491337I$ $a = 1.94925 + 1.15029I$ $b = 0.515472 - 0.844495I$	$-3.08975 + 0.76544I$	$-5.09780 - 0.03360I$
$u = 0.210864 - 0.491337I$ $a = 1.94925 - 1.15029I$ $b = 0.515472 + 0.844495I$	$-3.08975 - 0.76544I$	$-5.09780 + 0.03360I$
$u = -0.357502 + 0.389914I$ $a = 1.057850 - 0.269178I$ $b = 1.216960 + 0.412368I$	$-1.18445 - 1.39735I$	$-10.38498 - 7.63627I$
$u = -0.357502 - 0.389914I$ $a = 1.057850 + 0.269178I$ $b = 1.216960 - 0.412368I$	$-1.18445 + 1.39735I$	$-10.38498 + 7.63627I$
$u = 1.45944 + 0.24660I$ $a = -1.60374 + 0.25242I$ $b = 1.67036 - 0.13168I$	$-12.74980 - 1.29840I$	0
$u = 1.45944 - 0.24660I$ $a = -1.60374 - 0.25242I$ $b = 1.67036 + 0.13168I$	$-12.74980 + 1.29840I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.47987 + 0.09429I$ $a = 1.64800 - 0.11539I$ $b = -1.92274 + 0.85333I$	$-6.22918 + 4.98031I$	0
$u = -1.47987 - 0.09429I$ $a = 1.64800 + 0.11539I$ $b = -1.92274 - 0.85333I$	$-6.22918 - 4.98031I$	0
$u = 0.268582 + 0.388279I$ $a = -2.50694 - 2.55703I$ $b = -0.609144 + 1.104730I$	$-1.75519 - 5.95991I$	$-1.96592 + 6.04253I$
$u = 0.268582 - 0.388279I$ $a = -2.50694 + 2.55703I$ $b = -0.609144 - 1.104730I$	$-1.75519 + 5.95991I$	$-1.96592 - 6.04253I$
$u = -0.421212$ $a = 0.897582$ $b = 0.341691$	-0.747108	-13.2570
$u = 1.58306$ $a = -1.63258$ $b = 2.46027$	-8.82351	0
$u = -1.59892 + 0.25190I$ $a = 1.392980 + 0.180687I$ $b = -1.91042 + 0.74588I$	$-5.56562 + 3.33736I$	0
$u = -1.59892 - 0.25190I$ $a = 1.392980 - 0.180687I$ $b = -1.91042 - 0.74588I$	$-5.56562 - 3.33736I$	0
$u = 1.53550 + 0.51590I$ $a = -1.52077 + 0.57665I$ $b = 2.45062 + 0.56733I$	$-14.3064 - 9.3860I$	0
$u = 1.53550 - 0.51590I$ $a = -1.52077 - 0.57665I$ $b = 2.45062 - 0.56733I$	$-14.3064 + 9.3860I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.54978 + 0.53968I$ $a = 1.48248 - 0.57690I$ $b = -2.38130 - 0.59597I$	$-13.5587 - 16.7600I$	0
$u = 1.54978 - 0.53968I$ $a = 1.48248 + 0.57690I$ $b = -2.38130 + 0.59597I$	$-13.5587 + 16.7600I$	0
$u = 0.267828 + 0.052884I$ $a = 0.09300 - 3.41499I$ $b = -1.013240 - 0.178283I$	$-0.14166 - 4.08705I$	$-7.04533 + 7.48783I$
$u = 0.267828 - 0.052884I$ $a = 0.09300 + 3.41499I$ $b = -1.013240 + 0.178283I$	$-0.14166 + 4.08705I$	$-7.04533 - 7.48783I$
$u = -1.58752 + 0.74757I$ $a = -1.048890 - 0.614073I$ $b = 1.92049 - 1.18239I$	$-12.66830 + 5.03933I$	0
$u = -1.58752 - 0.74757I$ $a = -1.048890 + 0.614073I$ $b = 1.92049 + 1.18239I$	$-12.66830 - 5.03933I$	0
$u = -1.67659 + 0.87833I$ $a = 0.915811 + 0.565877I$ $b = -1.91733 + 1.36586I$	$-11.65830 - 1.69347I$	0
$u = -1.67659 - 0.87833I$ $a = 0.915811 - 0.565877I$ $b = -1.91733 - 1.36586I$	$-11.65830 + 1.69347I$	0

$$\text{II. } I_2^u = \langle 9.43 \times 10^{15}u^{31} - 1.04 \times 10^{16}u^{30} + \dots + 2.61 \times 10^{15}b + 8.63 \times 10^{16}, -8.61 \times 10^{16}u^{31} + 1.00 \times 10^{17}u^{30} + \dots + 2.87 \times 10^{16}a - 1.04 \times 10^{18}, u^{32} - 12u^{30} + \dots + 14u + 11 \rangle$$

(i) Arc colorings

$$\begin{aligned} a_4 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_3 &= \begin{pmatrix} 1 \\ -u^2 \end{pmatrix} \\ a_6 &= \begin{pmatrix} 3.00062u^{31} - 3.48635u^{30} + \dots + 16.9894u + 36.2451 \\ -3.61394u^{31} + 3.97380u^{30} + \dots - 9.33313u - 33.0980 \end{pmatrix} \\ a_2 &= \begin{pmatrix} 0.673654u^{31} - 0.202721u^{30} + \dots - 1.38111u + 6.42284 \\ 0.436104u^{31} - 0.802754u^{30} + \dots + 4.55569u + 3.93941 \end{pmatrix} \\ a_1 &= \begin{pmatrix} 1.10976u^{31} - 1.00548u^{30} + \dots + 3.17457u + 10.3622 \\ 0.436104u^{31} - 0.802754u^{30} + \dots + 4.55569u + 3.93941 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} -0.551853u^{31} + 1.15430u^{30} + \dots - 4.09676u - 14.1990 \\ -0.260882u^{31} + 0.703792u^{30} + \dots - 1.69474u + 0.574746 \end{pmatrix} \\ a_5 &= \begin{pmatrix} 2.29143u^{31} - 3.63005u^{30} + \dots + 35.4371u + 40.5356 \\ -3.03963u^{31} + 3.45383u^{30} + \dots - 7.45780u - 30.2115 \end{pmatrix} \\ a_9 &= \begin{pmatrix} u \\ -u^3 + u \end{pmatrix} \\ a_8 &= \begin{pmatrix} 0.227355u^{31} - 2.01232u^{30} + \dots + 5.94324u + 7.33651 \\ -1.19027u^{31} + 1.68925u^{30} + \dots - 11.2608u - 16.4565 \end{pmatrix} \\ a_7 &= \begin{pmatrix} 3.83119u^{31} - 3.80169u^{30} + \dots - 5.28595u + 35.2770 \\ -4.36810u^{31} + 4.86030u^{30} + \dots - 16.0382u - 45.6150 \end{pmatrix} \\ a_{12} &= \begin{pmatrix} -0.592703u^{31} + 1.96262u^{30} + \dots - 9.25022u - 6.20976 \\ 2.14537u^{31} - 3.17011u^{30} + \dots + 14.9572u + 20.0165 \end{pmatrix} \end{aligned}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes

$$= -\frac{8803823690177608}{2608335035160577}u^{31} + \frac{27671018694520353}{2608335035160577}u^{30} + \dots - \frac{228493900103964694}{2608335035160577}u - \frac{259489611336058185}{2608335035160577}$$

(iv) u -Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{32} - 4u^{31} + \dots - 60u + 9$
c_2	$u^{32} - 9u^{30} + \dots - 2u + 1$
c_3	$u^{32} - 12u^{30} + \dots + 14u + 11$
c_4	$u^{32} - 8u^{31} + \dots - 7u + 1$
c_5	$u^{32} - 9u^{30} + \dots + 2u + 1$
c_6	$u^{32} - 2u^{30} + \dots + 21u + 11$
c_7	$u^{32} + 8u^{31} + \dots + 7u + 1$
c_8	$u^{32} + 4u^{30} + \dots + 104u + 31$
c_9	$u^{32} - 12u^{30} + \dots - 14u + 11$
c_{10}	$u^{32} + 16u^{31} + \dots + 4u + 1$
c_{11}	$u^{32} - 2u^{30} + \dots - 21u + 11$
c_{12}	$u^{32} + 4u^{31} + \dots - 53u + 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{32} - 8y^{30} + \dots + 684y + 81$
c_2, c_5	$y^{32} - 18y^{31} + \dots - 14y + 1$
c_3, c_9	$y^{32} - 24y^{31} + \dots - 1164y + 121$
c_4, c_7	$y^{32} + 12y^{31} + \dots + 29y + 1$
c_6, c_{11}	$y^{32} - 4y^{31} + \dots + 593y + 121$
c_8	$y^{32} + 8y^{31} + \dots - 5794y + 961$
c_{10}	$y^{32} - 8y^{31} + \dots - 8y + 1$
c_{12}	$y^{32} + 16y^{31} + \dots - 229y + 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.608550 + 0.702570I$ $a = 0.054998 - 0.773982I$ $b = 0.028720 - 0.337814I$	$1.10440 + 2.37787I$	$-8.44125 - 4.16468I$
$u = 0.608550 - 0.702570I$ $a = 0.054998 + 0.773982I$ $b = 0.028720 + 0.337814I$	$1.10440 - 2.37787I$	$-8.44125 + 4.16468I$
$u = 0.393505 + 1.055530I$ $a = -0.378271 + 0.727602I$ $b = -0.564637 + 0.479550I$	$2.95553 - 1.85219I$	$-2.71010 - 2.33872I$
$u = 0.393505 - 1.055530I$ $a = -0.378271 - 0.727602I$ $b = -0.564637 - 0.479550I$	$2.95553 + 1.85219I$	$-2.71010 + 2.33872I$
$u = 1.149900 + 0.127905I$ $a = -0.126713 - 0.886278I$ $b = 0.029846 - 0.370064I$	$2.90185 - 1.95756I$	$-10.84834 + 6.93834I$
$u = 1.149900 - 0.127905I$ $a = -0.126713 + 0.886278I$ $b = 0.029846 + 0.370064I$	$2.90185 + 1.95756I$	$-10.84834 - 6.93834I$
$u = 0.792279 + 0.213841I$ $a = -0.257736 - 1.275920I$ $b = -0.020489 - 0.337783I$	$4.30341 + 0.61589I$	$4.66315 + 6.19858I$
$u = 0.792279 - 0.213841I$ $a = -0.257736 + 1.275920I$ $b = -0.020489 + 0.337783I$	$4.30341 - 0.61589I$	$4.66315 - 6.19858I$
$u = 1.123130 + 0.364207I$ $a = -1.00348 + 1.50445I$ $b = 0.903409 - 1.071170I$	$-9.60306 - 5.39034I$	$-9.79295 - 0.61492I$
$u = 1.123130 - 0.364207I$ $a = -1.00348 - 1.50445I$ $b = 0.903409 + 1.071170I$	$-9.60306 + 5.39034I$	$-9.79295 + 0.61492I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.062610 + 0.540756I$ $a = -0.301171 + 0.165537I$ $b = -0.006583 - 0.183056I$	$-0.34395 - 7.11061I$	$-6.1757 + 16.1016I$
$u = 1.062610 - 0.540756I$ $a = -0.301171 - 0.165537I$ $b = -0.006583 + 0.183056I$	$-0.34395 + 7.11061I$	$-6.1757 - 16.1016I$
$u = -0.731631 + 0.286301I$ $a = 0.52628 - 1.91649I$ $b = 1.094140 + 0.871235I$	$-4.27035 - 0.78775I$	$-13.76747 + 0.79111I$
$u = -0.731631 - 0.286301I$ $a = 0.52628 + 1.91649I$ $b = 1.094140 - 0.871235I$	$-4.27035 + 0.78775I$	$-13.76747 - 0.79111I$
$u = -0.770679 + 0.148242I$ $a = 0.08527 + 3.02934I$ $b = -1.05799 - 1.31030I$	$-2.61922 + 5.83665I$	$-12.12805 - 5.23486I$
$u = -0.770679 - 0.148242I$ $a = 0.08527 - 3.02934I$ $b = -1.05799 + 1.31030I$	$-2.61922 - 5.83665I$	$-12.12805 + 5.23486I$
$u = 1.068010 + 0.613139I$ $a = -0.080989 - 0.362274I$ $b = 0.291002 + 0.024258I$	$0.84523 - 3.87440I$	$-7.28635 + 0.99100I$
$u = 1.068010 - 0.613139I$ $a = -0.080989 + 0.362274I$ $b = 0.291002 - 0.024258I$	$0.84523 + 3.87440I$	$-7.28635 - 0.99100I$
$u = -0.455603 + 1.225610I$ $a = -0.367004 + 0.445859I$ $b = -2.03913 - 0.37515I$	$2.13581 - 2.36751I$	$-0.13711 + 10.90887I$
$u = -0.455603 - 1.225610I$ $a = -0.367004 - 0.445859I$ $b = -2.03913 + 0.37515I$	$2.13581 + 2.36751I$	$-0.13711 - 10.90887I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.311760 + 0.096882I$ $a = -1.85773 + 0.62801I$ $b = 2.09422 - 1.84300I$	$-6.92946 + 2.50095I$	$-15.7221 - 2.9652I$
$u = -1.311760 - 0.096882I$ $a = -1.85773 - 0.62801I$ $b = 2.09422 + 1.84300I$	$-6.92946 - 2.50095I$	$-15.7221 + 2.9652I$
$u = -1.326920 + 0.040818I$ $a = 0.862918 + 1.085500I$ $b = -1.10833 - 2.42545I$	$-5.10653 + 5.11428I$	$-11.6019 - 9.0253I$
$u = -1.326920 - 0.040818I$ $a = 0.862918 - 1.085500I$ $b = -1.10833 + 2.42545I$	$-5.10653 - 5.11428I$	$-11.6019 + 9.0253I$
$u = -1.286370 + 0.411422I$ $a = 1.96528 + 0.76818I$ $b = -2.57628 + 0.34784I$	$-1.23130 + 7.74404I$	$-2.80593 - 4.22492I$
$u = -1.286370 - 0.411422I$ $a = 1.96528 - 0.76818I$ $b = -2.57628 - 0.34784I$	$-1.23130 - 7.74404I$	$-2.80593 + 4.22492I$
$u = 1.38689 + 0.41154I$ $a = 1.32731 - 0.85356I$ $b = -1.70308 + 0.12392I$	$-10.20550 + 1.53886I$	$-8.62767 - 1.93246I$
$u = 1.38689 - 0.41154I$ $a = 1.32731 + 0.85356I$ $b = -1.70308 - 0.12392I$	$-10.20550 - 1.53886I$	$-8.62767 + 1.93246I$
$u = -1.47647 + 0.19240I$ $a = -1.64111 - 0.12983I$ $b = 1.88472 - 0.73358I$	$-5.86392 + 4.22756I$	$-7.45717 - 3.66135I$
$u = -1.47647 - 0.19240I$ $a = -1.64111 + 0.12983I$ $b = 1.88472 + 0.73358I$	$-5.86392 - 4.22756I$	$-7.45717 + 3.66135I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.225427 + 0.412274I$		
$a = 1.51033 + 0.38729I$	$-0.97158 - 1.70215I$	$2.83896 + 9.34419I$
$b = 1.250440 + 0.341656I$		
$u = -0.225427 - 0.412274I$		
$a = 1.51033 - 0.38729I$	$-0.97158 + 1.70215I$	$2.83896 - 9.34419I$
$b = 1.250440 - 0.341656I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{32} - 4u^{31} + \dots - 60u + 9)(u^{78} - 9u^{77} + \dots - 30111u - 3476)$
c_2	$(u^{32} - 9u^{30} + \dots - 2u + 1)(u^{78} + u^{77} + \dots + 25u - 1)$
c_3	$(u^{32} - 12u^{30} + \dots + 14u + 11)(u^{78} - u^{77} + \dots + 7307u - 713)$
c_4	$(u^{32} - 8u^{31} + \dots - 7u + 1)(u^{78} - 5u^{77} + \dots + 20u - 1)$
c_5	$(u^{32} - 9u^{30} + \dots + 2u + 1)(u^{78} + u^{77} + \dots + 25u - 1)$
c_6	$(u^{32} - 2u^{30} + \dots + 21u + 11)(u^{78} + 3u^{77} + \dots - 734300u + 685471)$
c_7	$(u^{32} + 8u^{31} + \dots + 7u + 1)(u^{78} - 5u^{77} + \dots + 20u - 1)$
c_8	$(u^{32} + 4u^{30} + \dots + 104u + 31)$ $\cdot (u^{78} + 5u^{77} + \dots + 107670903u + 34552577)$
c_9	$(u^{32} - 12u^{30} + \dots - 14u + 11)(u^{78} - u^{77} + \dots + 7307u - 713)$
c_{10}	$(u^{32} + 16u^{31} + \dots + 4u + 1)(u^{78} + u^{77} + \dots + 729u + 31)$
c_{11}	$(u^{32} - 2u^{30} + \dots - 21u + 11)(u^{78} + 3u^{77} + \dots - 734300u + 685471)$
c_{12}	$(u^{32} + 4u^{31} + \dots - 53u + 5)(u^{78} - 3u^{77} + \dots + 5399717u + 801148)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{32} - 8y^{30} + \dots + 684y + 81)$ $\cdot (y^{78} - 27y^{77} + \dots + 17262383y + 12082576)$
c_2, c_5	$(y^{32} - 18y^{31} + \dots - 14y + 1)(y^{78} - 73y^{77} + \dots + 105y + 1)$
c_3, c_9	$(y^{32} - 24y^{31} + \dots - 1164y + 121)$ $\cdot (y^{78} - 67y^{77} + \dots - 15851373y + 508369)$
c_4, c_7	$(y^{32} + 12y^{31} + \dots + 29y + 1)(y^{78} + 17y^{77} + \dots - 408y + 1)$
c_6, c_{11}	$(y^{32} - 4y^{31} + \dots + 593y + 121)$ $\cdot (y^{78} - 83y^{77} + \dots - 10360427562352y + 469870491841)$
c_8	$(y^{32} + 8y^{31} + \dots - 5794y + 961)$ $\cdot (y^{78} + 69y^{77} + \dots - 21520300962268511y + 1193880577340929)$
c_{10}	$(y^{32} - 8y^{31} + \dots - 8y + 1)(y^{78} + 5y^{77} + \dots - 120505y + 961)$
c_{12}	$(y^{32} + 16y^{31} + \dots - 229y + 25)$ $\cdot (y^{78} + 73y^{77} + \dots - 7450965034177y + 641838117904)$