FOUR-DIMENSIONAL FANO TORIC COMPLETE INTERSECTIONS

T. COATES, A. KASPRZYK AND T. PRINCE

ABSTRACT. We find at least 527 new four-dimensional Fano manifolds, each of which is a complete intersection in a smooth toric Fano manifold.

1. Introduction

Fano manifolds are the basic building blocks of algebraic geometry, both in the sense of the Minimal Model Program [5,12,21,45] and as the ultimate source of most explicit examples and constructions. There are finitely many deformation families of Fano manifolds in each dimension [33]. There is precisely one 1-dimensional Fano manifold: the line; there are 10 deformation families of 2-dimensional Fano manifolds: the del Pezzo surfaces; and there are 105 deformation families of 3-dimensional Fano manifolds [24–26, 36–40]. Very little is known about the classification of Fano manifolds in higher dimensions.

In this paper we begin to explore the geography of Fano manifolds in dimension 4. Four-dimensional Fano manifolds of higher Fano index have been classified [14–17, 24, 27, 28, 32, 34, 46, 47]—there are 35 in total—but the most interesting case, where the Fano variety has index 1, is wide open. We use computer algebra to find many 4-dimensional Fano manifolds that arise as complete intersections in toric Fano manifolds in codimension at most 4. We find at least 738 examples, 717 of which have Fano index 1 and 527 of which are new.

Suppose that Y is a toric Fano manifold and that L_1, \ldots, L_c are nef line bundles on Y such that $-K_Y - \Lambda$ is ample, where $\Lambda = c_1(L_1) + \cdots + c_1(L_c)$. Let $X \subset Y$ be a smooth complete intersection defined by a regular section of $\bigoplus_i L_i$. The Adjunction Formula gives that

$$-K_X = \left(-K_Y - \Lambda\right)\big|_X$$

so X is Fano. We find all four-dimensional Fano manifolds X of this form such that the codimension c is at most 4.

Our interest in this problem is motivated by a program to classify Fano manifolds in higher dimensions using mirror symmetry [9]. For each 4-dimensional Fano manifold X as above, therefore, we compute the essential ingredients for this program: the quantum period and regularized quantum differential equation associated to X, and a Laurent polynomial f that corresponds to X under mirror symmetry; we also calculate basic geometric data about X, the ambient space Y, and f. The results of our computations in machine-readable form, together with full details of our implementation and all source code used, can be found in the ancillary files which accompany this paper on the arXiv.

2. FINDING FOUR-DIMENSIONAL FANO TORIC COMPLETE INTERSECTIONS

Our method is as follows. Toric Fano manifolds Y are classified up to dimension 8 by Batyrev, Watanabe–Watanabe, Sato, Kreuzer–Nill, and Øbro. For each toric Fano manifold Y of dimension d=4+c, we:

- (i) compute the nef cone of Y;
- (ii) find all $\Lambda \in H^2(Y; \mathbb{Z})$ such that Λ is nef and $-K_Y \Lambda$ is ample;
- (iii) decompose Λ as the sum of c nef line bundles L_1, \ldots, L_c in all possible ways.

Each such decomposition determines a 4-dimensional Fano manifold $X \subset Y$, defined as the zero locus of a regular section of the vector bundle $\bigoplus_i L_i$. To compute the nef cone in step (i), we consider dual exact

 $Key\ words\ and\ phrases.$ Fano manifolds, mirror symmetry, quantum differential equations, Picard–Fuchs equations.

sequences

$$0 \longrightarrow \mathbb{L} \longrightarrow \mathbb{Z}^N \longrightarrow \mathbb{Z}^d \longrightarrow 0$$

$$0 \longleftarrow \mathbb{L}^* \longleftarrow D \qquad (\mathbb{Z}^N)^* \longleftarrow \rho^* \qquad (\mathbb{Z}^d)^* \longleftarrow 0$$

where the map ρ is defined by the N rays of a fan Σ for Y. There are canonical identifications $\mathbb{L}^* \cong H^2(Y;\mathbb{Z}) \cong \operatorname{Pic}(Y)$, and the nef cone of Y is the intersection of cones

$$NC(Y) = \bigcap_{\sigma \in \Sigma} \langle D_i : i \notin \sigma \rangle$$

where D_i is the image under D of the ith standard basis vector in $(\mathbb{Z}^N)^*$ [13, Proposition 15.1.3]. The classes Λ in step (ii) are the lattice points in the polyhedron $P = \operatorname{NC}(Y) \cap (-K_Y - \operatorname{NC}(Y))$ such that $-K_Y - \Lambda$ lies in the interior of $\operatorname{NC}(Y)$. Since $\operatorname{NC}(Y)$ is a strictly convex cone, P is compact and the number of lattice points in P is finite. We implement step (iii) by first expressing Λ as a sum of Hilbert basis elements in $\operatorname{NC}(Y)$ in all possible ways:

(1)
$$\Lambda = b_1 + \dots + b_r$$
 b_i an element of the Hilbert basis for NC(Y)

where some of the b_i may be repeated; this is a knapsack-style problem. We then, for each decomposition (1), partition the b_i into c subsets S_1, \ldots, S_c in all possible ways, and define the line bundle L_i to be the sum of the classes in S_i .

We found 117173 distinct triples $(X;Y;L_1,\ldots,L_c)$, with a total of 17934 distinct ambient toric varieties Y. Note that the representation of a given Fano manifold X as a toric complete intersection is far from unique: for example, if X is a complete intersection in Y given by a section of $L_1 \oplus \cdots \oplus L_c$ then it is also a complete intersection in $Y \times \mathbb{P}^1$ given by a section of $\pi_1^*L_1 \oplus \cdots \oplus \pi_1^*L_c \oplus \pi_2^*\mathcal{O}_{\mathbb{P}^1}(1)$. Thus we have found far fewer than 117173 distinct four-dimensional Fano manifolds. We show below, by calculating quantum periods of the Fano manifolds X, that we find at least 738 non-isomorphic Fano manifolds. Since the quantum period is a very strong invariant—indeed no examples of distinct Fano manifolds $X \not\cong X'$ with the same quantum period $G_X = G_{X'}$ are known—we believe that we found precisely 738 non-isomorphic Fano manifolds. Eliminating the quantum periods found in [11], we see that at least 527 of our examples are new.

Remark 2.1. There exist Fano manifolds which do not occur as complete intersections in toric Fano manifolds. But in low dimensions, most Fano manifolds arise this way: 8 of the 10 del Pezzo surfaces, and at least 78 of the 105 smooth 3-dimensional Fano manifolds, are complete intersections in toric Fano manifolds [10].

Remark 2.2. It may be the case that any d-dimensional Fano manifold which occurs as a toric complete intersection in fact occurs as a toric complete intersection in codimension d; we know of no counterexamples. But even if this holds in dimension 4, our search will probably not find all 4-dimensional Fano manifolds which occur as toric complete intersections. This is because, if one of the line bundles L_i involved is nef but not ample, then the Kähler cone for X can be strictly bigger than the Kähler cone for Y. In other words, it is possible for $-K_X$ to be ample on X even if $-K_Y - \Lambda$ is not ample on Y. For an explicit example of this in dimension 3, see [10, §55].

3. Quantum Periods and Mirror Laurent Polynomials

The quantum period G_X of a Fano manifold X is a generating function

(2)
$$G_X(t) = 1 + \sum_{d=1}^{\infty} c_d t^d \qquad t \in \mathbb{C}$$

for certain genus-zero Gromov-Witten invariants c_d of X which plays an important role in mirror symmetry. A precise definition can be found in [10, $\S B$], but roughly speaking one can think of c_d as the 'virtual number' of rational curves C in X that pass through a given point, satisfy certain constraints on their

complex structure, and satisfy $\langle -K_X, C \rangle = d$. The quantum period is discussed in detail in [9,10]; for us what will be important is that the regularized quantum period

(3)
$$\widehat{G}_X(t) = 1 + \sum_{d=1}^{\infty} d! c_d t^d \qquad t \in \mathbb{C}, |t| \ll \infty$$

satisfies a differential equation called the regularized quantum differential equation of X:

(4)
$$L_X \widehat{G}_X \equiv 0 \qquad \qquad L_X = \sum_{m=0}^{m=N} p_m(t) D^m$$

where the p_m are polynomials and $D = t \frac{d}{dt}$.

It has been proposed that Fano manifolds should correspond under mirror symmetry to Laurent polynomials which are *extremal* or of *low ramification* [9], in the sense discussed in §4 below. An *n*-dimensional Fano manifold X is said to be *mirror-dual* to a Laurent polynomial $f \in \mathbb{C}[x_1^{\pm 1}, \ldots, x_n^{\pm 1}]$ if the regularized quantum period of X coincides with the classical period of f:

$$\pi_f(t) = \frac{1}{(2\pi i)^n} \int_{(S^1)^n} \frac{1}{1 - tf} \frac{dx_1}{x_1} \cdots \frac{dx_n}{x_n}$$
 $t \in \mathbb{C}, |t| \ll \infty$

If a Fano manifold X is mirror-dual to the Laurent polynomial f then the regularized quantum differential equation (4) for X coincides with the Picard–Fuchs differential equation satisfied by π_f . The correspondence between Fano manifolds and Laurent polynomials is not one-to-one, but it is expected that any two Laurent polynomials f, g that are mirror-dual to the same Fano manifold are related by a birational transformation $\varphi \colon (\mathbb{C}^{\times})^n \dashrightarrow (\mathbb{C}^{\times})^n$ called a mutation or a symplectomorphism of cluster type [1,18,30]: $\varphi^* f = g$. We will write such a mutation as $f \xrightarrow{\varphi} g$. Mutations are known to preserve the classical period (ibid.): if $f \xrightarrow{\varphi} g$ then $\pi_f = \pi_g$.

Remark 3.1. In the paragraphs above we discuss *the* regularized quantum differential equation and *the* Picard–Fuchs differential equation. This involves choices of normalization. Our conventions are that the regularized quantum differential operator is the operator L_X as in (4) such that:

- (i) the order, N, of L_X is minimal; and
- (ii) the degree of $p_N(t)$ is minimal; and
- (iii) the leading coefficient of p_N is positive; and
- (iv) the coefficients of the polynomials p_0, \ldots, p_N are integers with greatest common divisor equal to 1.

The Picard–Fuchs differential operator is the differential operator L_f such that:

$$L_f \pi_f \equiv 0 \qquad \qquad L_f = \sum_{m=0}^{m=N} P_m(t) D^m$$

where the P_m are polynomials and $D = t \frac{d}{dt}$, and that the analogs of conditions (i)–(iv) above hold.

We determined the quantum period G_X , for each of the triples $(X;Y;L_1,\ldots,L_c)$ from §2, as follows. For each such triple we found, using the Mirror Theorem for toric complete intersections [20] and a generalization of a technique due to V. Przyjalkowski, a Laurent polynomial f that is mirror-dual to X. This process is described in detail in §5. We then computed, for each triple, the first 20 terms of the power series expansion of $\hat{G}_X = \pi_f$ using the Taylor expansion:

$$\pi_f(t) = \sum_{d=0}^{\infty} \alpha_d t^d$$

where α_d is the coefficient of the unit monomial in f^d . We divided the 117173 triples into 738 "buckets", according to the value of the first 20 terms of the power series expansion of $\widehat{G}_X = \pi_f$, and then proved that any two Fano manifolds X, X' in the same bucket have the same quantum period by exhibiting a chain of mutations $f \xrightarrow{\varphi_0} f_1 \xrightarrow{\varphi_1} \cdots \xrightarrow{\varphi_{n-1}} f_n \xrightarrow{\varphi_n} g$ that connects the Laurent polynomials f and g mirror-dual to X and X'

For each quantum period G_X , we computed the quantum differential operator L_X directly from the mirror Laurent polynomial f chosen above, using Lairez's generalized Griffiths–Dwork algorithm [35]. The output from Lairez's algorithm is a differential operator $L = \sum_{m=0}^{N} P_m(t)D^m$ with $P_0, \ldots, P_N \in \mathbb{Q}[t]$

such that, with very high probability, $L\pi_f \equiv 0$. Such an operator L gives a recurrence relation for the Taylor coefficients α_0 , α_1 , α_2 ... of π_f ; using this recurrence relation and the first 20 Taylor coefficients computed above, we solved for the first 2000 Taylor coefficients α_k . We then consider an operator:

$$\bar{L} = \sum_{m=0}^{\bar{N}} \bar{P}_m(t) D^m$$

where the \bar{P}_m are polynomials of degree at most \bar{R} , and impose the condition that $\bar{L}\pi_f \equiv 0$. The 2000 Taylor coefficients of π_f give 2000 linear equations for the coefficients of the polynomials \bar{P}_m and, provided that $(\bar{N}+1)(\bar{R}+1)\ll 2000$, this linear system is highly over-determined. Since we are looking for the Picard–Fuchs differential operator (see Remark 3.1), we may assume that (\bar{N},\bar{R}) is lexicographically less than $(N,\deg p_N)$. We searched systematically for such differential operators with $(\bar{N}+1)(\bar{R}+1)\ll 2000$, looking for the operator \bar{L} with lexicographically minimal (\bar{N},\bar{R}) and clearing denominators so that the analogs of conditions (iii) and (iv) in Remark 3.1 holds. We can say with high confidence that this operator \bar{L} is in fact the Picard–Fuchs operator L_f , although this is not proven—partly because Lairez's algorithm relies on a randomized interpolation scheme that is not guaranteed to produce an operator annihilating π_f , and partly because if L_f were to involve polynomials P_m of extremely large degree, 2000 terms of the Taylor expansion of π_f will not be enough to detect L_f . The operators \bar{L} that we found satisfy a number of delicate conditions that act as consistency checks: for example they are of Fuchsian type (which is true for L_f , as L_f arises geometrically from a variation of Hodge structure). Thus we are confident that $\bar{L} = L_f$ in every case¹. Since $\hat{G}_X = \pi_f$ and $L_X = L_f$ by construction, this determines, with high confidence, the quantum period G_X and the regularized quantum differential operator L_X .

Remark 3.2. The use of Laurent polynomials and Lairez's algorithm is essential here. There is a closed formula [10, Corollary D.5] for the quantum period of the Fano manifolds that we consider, and one could in principle use this together with the linear algebra calculation described above to compute (a good candidate for) the regularized quantum differential operator L_X . In practice, however, for many of the examples that we treat here, it is impossible to determine enough Taylor coefficients from the formula: the computations involved are well beyond the reach of current hardware, both in terms of memory consumption and runtime. By contrast, our approach using mirror symmetry and Lairez's algorithm will run easily on a desktop PC.

Remark 3.3. The regularized quantum differential equation for X coincides with the (unregularized) quantum differential equation for an anticanonical Calabi–Yau manifold $Z \subset X$. The study of the regularized quantum period from this point of view was pioneered by Batyrev–Ciocan-Fontanine–Kimvan Straten [3, 4], and an extensive study of fourth-order Calabi–Yau differential operators was made in [2]. We found 26 quantum differential operators with N=4; these coincide with or are equivalent to the fourth-order Calabi–Yau differential operators with AESZ IDs 1, 3, 4, 5, 6, 15, 16, 17, 18, 19, 20, 21, 22, 23, 34, 369, 370, and 424 in the Calabi–Yau Operators Database [51], together with one new fourth-order Calabi–Yau differential operator (which corresponds to our period sequence with ID 469).

4. Ramification Data

Consider now one of our regularized quantum differential operators:

$$L_X = \sum_{m=0}^{m=N} p_m(t) D^m$$

as in (4), and its local system $\mathbb{V} \to \mathbb{P}^1 \setminus S$ of solutions. Here $S \subset \mathbb{P}^1$ is the set of singular points of the regularized quantum differential equation.

Definition 4.1 ([9]). Let $S \subset \mathbb{P}^1$ be a finite set and $\mathbb{V} \to \mathbb{P}^1 \setminus S$ a local system. Fix a basepoint $x \in \mathbb{P}^1 \setminus S$. For $s \in S$, choose a small loop that winds once anticlockwise around s and connect it to x via a path, thereby making a loop γ_s about s based at x. Let $T_s \colon \mathbb{V}_x \to \mathbb{V}_x$ denote the monodromy of \mathbb{V} along γ_s . The ramification of \mathbb{V} is:

$$\mathrm{rf}(\mathbb{V}) := \sum_{s \in S} \dim \left(\mathbb{V}_x / \mathbb{V}_x^{T_s} \right)$$

¹This could be proved in any given case using methods of van Hoeij [50]; cf. [35, §8.2.2].

Ramification defect	0	1	2	3
Number of occurrences	92	290	167	26

Table 1. Ramification Defects for 575 of the 738 Regularized Quantum Differential Operators

The ramification $\mathrm{rf}(\mathbb{V})$ is independent of the choices of basepoint x and of small loops γ_s . A non-trivial, irreducible local system $\mathbb{V} \to \mathbb{P}^1 \setminus S$ has $\mathrm{rf} \, \mathbb{V} \geq 2 \, \mathrm{rk} \, \mathbb{V}$: see [9, §2].

Definition 4.2. Let $\mathbb{V} \to \mathbb{P}^1 \setminus S$ be a local system as above. The *ramification defect* of \mathbb{V} is the quantity $\mathrm{rf}(\mathbb{V}) - 2\,\mathrm{rk}(\mathbb{V})$. A local system of ramification defect zero is called *extremal*.

Definition 4.3. The ramification (respectively ramification defect) of a differential operator L_X is the ramification (respectively ramification defect) of the local system of solutions $L_X f \equiv 0$.

To compute the ramification of L_X , we proceed as in [11]. One can compute Jordan normal forms of the local log-monodromies $\{\log T_s : s \in S\}$ using linear algebra over a splitting field k for $p_N(t)$. (Every singular point of L_X is defined over k.) This is classical, going back to Birkhoff [6], as corrected by Gantmacher [19, vol. 2, §10] and Turrittin [49]; a very convenient presentation can be found in the book of Kedlaya [31, §7.3]. In practice we use the symbolic implementation of $\overline{\mathbb{Q}}$ provided by the computational algebra system Magma [7, 48]. We computed ramification data for 575 of the 738 regularized quantum differential operators, finding ramification defects as shown in Table 1; this lends some support to the conjecture, due to Golyshev [9], that a Laurent polynomial f which is mirror-dual to a Fano manifold should have a Picard–Fuchs operator L_f that is extremal or of low ramification. For the remaining 163 regularized quantum differential operators, the symbol $p_N(t)$ contains a factor of extremely high degree. This makes the computation of ramification data prohibitively expensive.

5. The Przyjalkowski Method

We now explain, given complete intersection data $(X; Y; L_1, \ldots, L_c)$ as in §2, how to find a Laurent polynomial f that is mirror-dual to X. This is a slight generalization of a technique that we learned from V. Przyjalkowski² [42,43], and which is based on the mirror theorems for toric complete intersections due to Givental [20] and Hori–Vafa [22]. Recall the exact sequence

$$0 \longleftarrow \mathbb{L}^* \longleftarrow D \qquad (\mathbb{Z}^N)^* \longleftarrow \rho^* \qquad (\mathbb{Z}^d)^* \longleftarrow 0$$

from §2 and the elements $D_i \in \mathbb{L}^*$, $1 \leq i \leq N$, defined by the standard basis elements of $(\mathbb{Z}^N)^*$. Recall further that $\mathbb{L}^* \cong \operatorname{Pic}(Y)$, so that each line bundle L_m defines a class in \mathbb{L}^* . Suppose that there exists a choice of disjoint subsets E, S_1, \ldots, S_c of $\{1, 2, \ldots, N\}$ such that:

- $\{D_i : j \in E\}$ is a basis for \mathbb{L}^* ;
- each L_m is a non-negative linear combination of $\{D_j : j \in E\}$;
- $\sum_{k \in S_m} D_k = L_m$ for each $m \in \{1, 2, \dots, c\}$;

and distinguished elements $s_m \in S_m$, $1 \le m \le c$. Set $S_m^{\circ} = S_m \setminus \{s_m\}$. Writing the map D in terms of the standard basis for $(\mathbb{Z}^N)^*$ and the basis $\{D_j : j \in E\}$ for \mathbb{L}^* defines an $(N-d) \times N$ matrix (m_{ji}) of integers. Let (x_1, \ldots, x_N) denote the standard co-ordinates on $(\mathbb{C}^\times)^N$, let r = N - d, and define q_1, \ldots, q_r and F_1, \ldots, F_c by:

$$q_j = \prod_{i=1}^{N} x_i^{m_{ji}} \qquad F_m = \sum_{k \in S_m} x_k$$

Givental [20] and Hori–Vafa [22] have shown that:

(5)
$$G_X = \int_{\Gamma} e^{tW} \frac{\bigwedge_{i=1}^N \frac{dx_i}{x_i}}{\bigwedge_{m=1}^c dF_m \wedge \bigwedge_{j=1}^r \frac{dq_j}{q_j}}$$

²Przyjalkowski informs us that he learned this, for the case of the cubic threefold, from L. Katzarkov [29] and D. Orlov [44].

where $W = x_1 + \cdots + x_N$ and Γ is a certain cycle in the submanifold of $(\mathbb{C}^{\times})^N$ defined by:

$$q_1 = \dots = q_r = 1 \qquad F_1 = \dots = F_c = 1$$

Introducing new variables y_i for $i \in \bigcup_{m=1}^c S_m^{\circ}$, setting

$$x_i = \begin{cases} \frac{1}{1 + \sum_{k \in S_m^{\circ}} y_k} & \text{if } i = s_m \\ \frac{y_i}{1 + \sum_{k \in S_m^{\circ}} y_k} & \text{if } i \in S_m^{\circ} \end{cases}$$

and using the relations $q_1 = \cdots = q_r = 1$ to eliminate the variables x_j , $j \in E$, allows us to write W - c as a Laurent polynomial f in the variables:

$$\{y_i : i \in \bigcup_{m=1}^c S_m^{\circ}\}$$
 and $\{x_i : i \notin E \text{ and } i \notin \bigcup_{m=1}^c S_m^{\circ}\}$

The mirror theorem (5) then implies that $\widehat{G}_X = \pi_f$, or in other words that f is mirror-dual to X.

The Laurent polynomial f produced by Przyjalkowski's method depends on our choices of E, S_1, \ldots, S_c , and S_1, \ldots, S_c , but up to mutation this is not the case:

Theorem 5.1 ([41]). Let Y be a toric Fano manifold and let L_1, \ldots, L_c be nef line bundles on Y such that $-K_Y - \Lambda$ is ample, where $\Lambda = c_1(L_1) + \cdots + c_1(L_c)$. Let $X \subset Y$ be a smooth complete intersection defined by a regular section of $\bigoplus_i L_i$. Let f and g be Laurent polynomial mirrors to X obtained by applying Przyjalkowski's method to $(X;Y;L_1,\ldots,L_c)$ as above, but with possibly-different choices for the subsets E, S_1,\ldots,S_c and the elements s_1,\ldots,s_c . Then there exists a mutation φ such that $f \xrightarrow{\varphi} g$.

Example 5.2. Let Y be the projectivization of the vector bundle $\mathcal{O}^{\oplus 2} \oplus \mathcal{O}(1)^{\oplus 2}$ over \mathbb{P}^2 . Choose a basis for the two-dimensional lattice \mathbb{L}^* such that the matrix (m_{ji}) of the map D is:

$$\begin{pmatrix} 1 & 1 & 1 & 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 1 & 1 & 1 & 1 \end{pmatrix}$$

Consider the line bundle $L_1 \to Y$ defined by the element $(2,1) \in \mathbb{L}^*$, and the Fano hypersurface $X \subset Y$ defined by a regular section of L_1 . Applying Przyjalkowski's method to the triple $(X;Y;L_1)$ with $E = \{3,4\}$, $S_1 = \{1,2,5\}$, and $S_1 = 1$ yields the Laurent polynomial

$$f = \frac{(1+y_2+y_5)^2}{y_2x_6x_7} + \frac{1+y_2+y_5}{y_5x_6x_7} + x_6 + x_7$$

mirror-dual to X. Applying the method with $E = \{3, 4\}$, $S_1 = \{1, 6\}$, and $s_1 = 1$ yields:

$$g = x_2 + \frac{(1+y_6)^2}{x_2 y_6 x_7} + \frac{1+y_6}{x_5 y_6 x_7} + x_5 + x_7$$

We have that $f \xrightarrow{\varphi} g$ where the mutation $\varphi \colon (\mathbb{C}^{\times})^4 \to (\mathbb{C}^{\times})^4$ is given by:

$$(x_2, x_5, y_6, x_7) \mapsto \left(\frac{x_2}{x_5 y_6}, \frac{1}{y_6}, x_7, x_2 + x_5\right) = (y_2, y_5, x_6, x_7)$$

Remark 5.3. Observe that, for a complete intersection of dimension n and codimension c, Przyjalkowski's method requires partitioning n+c variables into c disjoint subsets. If $\frac{n+c}{c} < 2$ then at least one of the subsets must have size one and so the corresponding variable, x_j say, is eliminated from the Laurent polynomial via the equation $x_j = 1$. One could therefore have obtained the resulting Laurent polynomial from a complete intersection with smaller codimension: new Laurent polynomials are found only when $\frac{n+c}{c} \geq 2$, that is, when the codimension is at most the dimension. In particular, all possible mirrors to 4-dimensional Fano toric complete intersections given by the Przyjalkowski method occur for complete intersections in toric manifolds of dimension at most 8.

6. Examples

6.1. **The Cubic 4-fold.** Let X be the cubic 4-fold. This arises in our classification from the complete intersection data (X;Y;L) with $Y=\mathbb{P}^5$ and $L=\mathcal{O}_{\mathbb{P}^5}(3)$. The Przyjalkowski method yields [23, §2.1] a Laurent polynomial:

$$f = \frac{(1+x+y)^3}{xyzw} + z + w$$

mirror-dual to X, and elementary calculation gives:

$$\pi_f(t) = \sum_{d=0}^{\infty} \frac{(3d)!(3d)!}{(d!)^6} t^{3d}$$

Thus $\hat{G}_X = \pi_f$, and the corresponding regularized quantum differential operator is:

$$L_X = D^4 - 729t^3(D+1)^2(D+2)^2$$

The local log-monodromies for the local system of solutions $L_X g \equiv 0$ are:

$$\begin{pmatrix}
0 & 1 & 0 & 0 \\
0 & 0 & 1 & 0 \\
0 & 0 & 0 & 1 \\
0 & 0 & 0 & 0
\end{pmatrix}$$
at $t = 0$

$$\begin{pmatrix}
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 \\
0 & 0 & 0 & 0
\end{pmatrix}$$
at $t = \frac{1}{9}$

$$\begin{pmatrix}
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 \\
0 & 0 & 0 & 0
\end{pmatrix}$$
at the roots of $81t^2 + 9t + 1 = 0$

$$\begin{pmatrix}
0 & 1 & 0 & 0 \\
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0
\end{pmatrix}$$
at $t = \infty$

and the operator L_X is extremal.

6.2. A (3,3) Complete Intersection in \mathbb{P}^6 . Let X be a complete intersection in $Y = \mathbb{P}^6$ of type (3,3). This arises in our classification from the complete intersection data $(X;Y;L_1,L_2)$ with $L_1 = L_2 = \mathcal{O}_{\mathbb{P}^6}(3)$. The Przyjalkowski method yields a Laurent polynomial:

$$f = \frac{(1+x+y)^3(1+z+w)^3}{xyzw} - 36$$

mirror-dual to X, and [10, Corollary D.5] gives:

$$\widehat{G}_X = \pi_f(t) = \sum_{k=0}^{\infty} \sum_{l=0}^{\infty} \frac{(3l)!(3l)!(k+l)!}{k!(l!)^7} (-36)^k t^{k+l}$$

The corresponding regularized quantum differential operator L_X is:

$$(36t+1)^{4}(693t-1)D^{4}$$

$$+18t(36t+1)^{3}(13860t+61)D^{3}$$

$$+9t(36t+1)^{2}(3492720t^{2}+57672t+77)D^{2}$$

$$+144t(36t+1)(11226600t^{3}+377622t^{2}+2754t+1)D$$

$$+15552t^{2}(1796256t^{3}+98496t^{2}+1605t+7)$$

The local log-monodromies for the local system of solutions $L_X g \equiv 0$ are:

$$\begin{pmatrix}
0 & 1 & 0 & 0 \\
0 & 0 & 1 & 0 \\
0 & 0 & 0 & 1 \\
0 & 0 & 0 & 0
\end{pmatrix}$$
at $t = 0$

$$\begin{pmatrix}
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 \\
0 & 0 & 0 & 0
\end{pmatrix}$$
at $t = \frac{1}{693}$

$$\begin{pmatrix}
\frac{2}{3} & 1 & 0 & 0 \\
0 & \frac{2}{3} & 0 & 0 \\
0 & 0 & \frac{1}{3} & 1 \\
0 & 0 & 0 & \frac{1}{3}
\end{pmatrix}$$
at $t = -\frac{1}{36}$

and so the operator L_X is extremal.

7. Results and Analysis

We close by indicating how basic numerical invariants—degree and size of cohomology—vary across the 738 families of Fano manifolds that we have found. The degree $(-K_X)^4$ varies from 5 to 800, as shown in Figures 1 and 2.

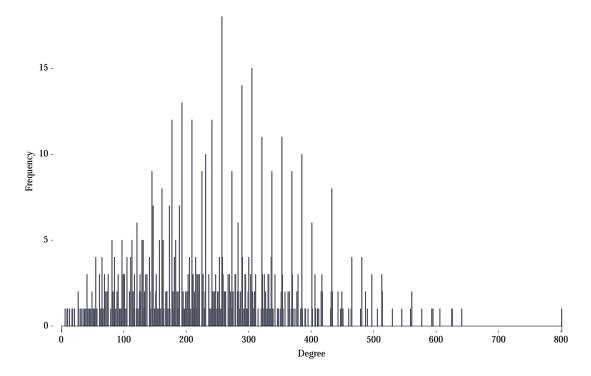


FIGURE 1. The Distribution of Degrees (Frequency Plot)

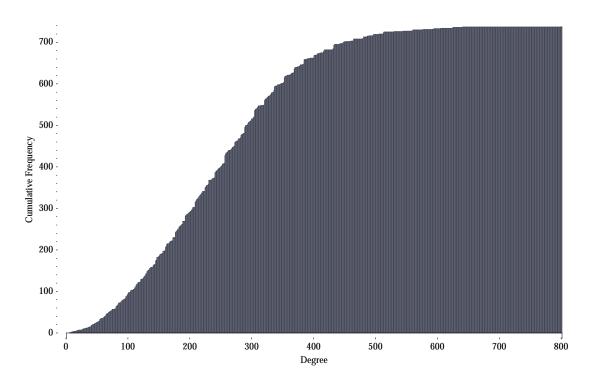


FIGURE 2. The Distribution of Degrees (Cumulative Frequency Plot)

We do not have direct access to the size of the cohomology algebra of our Fano manifolds X, as many of the line bundles occurring in the complete intersection data $(X;Y;L_1,\ldots,L_c)$ are not ample and so the

Lefschetz Theorem need not apply. But the order N of the regularized quantum differential operator is a good proxy for the size of the cohomology. N is the rank of a certain local system—an irreducible piece of the Fourier–Laplace transform of the restriction of the Dubrovin connection (in the Frobenius manifold given by the quantum cohomology of X) to the line in $H^{\bullet}(X)$ spanned by $-K_X$ —and in the case where this local system is irreducible, which is typical, N will coincide with the dimension of $H^{\bullet}(X)$. For our examples, N lies in the set $\{4,6,8,10,12\}$. Figure 3 shows how N varies with the degree $(-K_X)^4$, with darker grays indicating a larger number of examples with that N and degree.

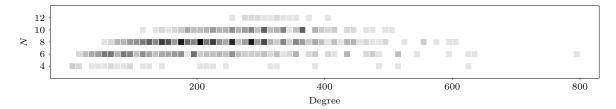


Figure 3. The Distribution of Degrees with N

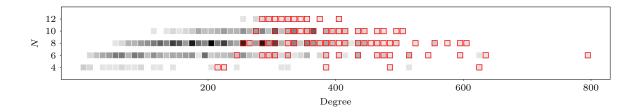


FIGURE 4. The Distribution of Degrees with N, with Toric Fano Manifolds Highlighted.

The isolated example on the right of Figure 3, with N=6 and degree 800, is the blow-up of $\mathbb{P}(1,1,1,1,3)$ at a point. Figure 4 again shows how N varies with the degree $(-K_X)^4$, but this time with toric Fano manifolds highlighted in red. Figure 5 shows how the Euler number $\chi(T_X)$ varies with the degree $(-K_X)^4$, with darker grays indicating a larger number of examples with that Euler number and degree. The three examples with the largest Euler number χ are a quintic hypersurface in \mathbb{P}^5 , with $\chi=825$; a complete intersection of type (2,4) in \mathbb{P}^6 , with $\chi=552$; and a complete intersection of type (3,3) in \mathbb{P}^6 , with $\chi=369$. The three examples with the most negative Euler number are $\mathbb{P}^1\times V_4^3$ where V_4^3 is a quartic hypersurface in \mathbb{P}^4 , with $\chi=-112$; $\mathbb{P}^1\times V_6^3$ where V_6^3 is a complete intersection of type (2,3) in \mathbb{P}^5 , with $\chi=-72$; and $\mathbb{P}^1\times V_8^3$ where V_8^3 is a complete intersection of type (2,2,2) in \mathbb{P}^6 , with $\chi=-48$.

8. Source Code and Data

The results of our computations, in machine readable form, together with full source code written in Magma [7] can be found in the ancillary files which accompany this paper on the arXiv. See the files called README.txt for details. The source code and data, but not the text of this paper, are released under a Creative Commons CC0 license [8]: see the files called COPYING.txt for details. If you make use of the source code or data in an academic or commercial context, you should acknowledge this by including a reference or citation to this paper.

ACKNOWLEDGMENTS

The computations underlying this work were performed using the Imperial College High Performance Computing Service and the compute cluster at the Department of Mathematics, Imperial College London. We thank Simon Burbidge, Matt Harvey, and Andy Thomas for valuable technical assistance. We thank John Cannon and the Computational Algebra Group at the University of Sydney for providing licenses for the computer algebra system Magma. This research was supported by a Royal Society University Research Fellowship (TC); the Leverhulme Trust; ERC Starting Investigator Grant number 240123; EPSRC grant EP/I008128/1; an EPSRC Small Equipment grant; and an EPSRC Prize Studentship (TP). We thank Alessio Corti for a number of very useful conversations, Pierre Lairez for explaining his generalized

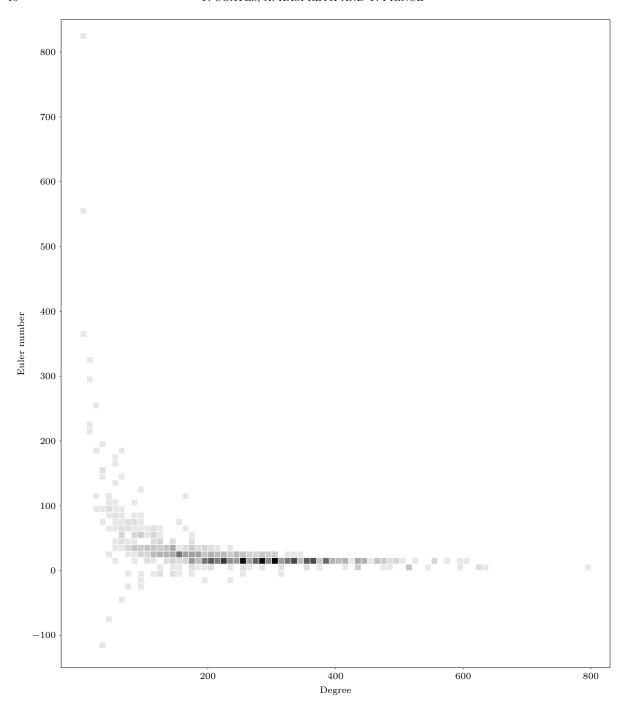


Figure 5. The Distribution of Degrees with Euler Number.

Griffiths–Dwork algorithm and sharing his code with us, and Duco van Straten for his analysis of the regularized quantum differential operators with N=4.

References

- [1] Mohammad Akhtar, Tom Coates, Sergey Galkin, and Alexander M. Kasprzyk, *Minkowski polynomials and mutations*, SIGMA Symmetry Integrability Geom. Methods Appl. 8 (2012), Paper 094, 17.
- [2] Gert Almkvist, Christian van Enckevort, Duco van Straten, and Wadim Zudilin, Tables of Calabi-Yau equations, arXiv:math/0507430 [math.AG], 2005.
- [3] Victor V. Batyrev, Ionut Ciocan-Fontanine, Bumsig Kim, and Duco van Straten, Conifold transitions and mirror symmetry for Calabi-Yau complete intersections in Grassmannians, Nuclear Phys. B **514** (1998), no. 3, 640–666.
- [4] Victor V. Batyrev, Ionuţ Ciocan-Fontanine, Bumsig Kim, and Duco van Straten, Mirror symmetry and toric degenerations of partial flag manifolds, Acta Math. 184 (2000), no. 1, 1–39.

- [5] Caucher Birkar, Paolo Cascini, Christopher D. Hacon, and James McKernan, Existence of minimal models for varieties of log general type, J. Amer. Math. Soc. 23 (2010), no. 2, 405–468.
- [6] George D. Birkhoff, Equivalent singular points of ordinary linear differential equations, Math. Ann. 74 (1913), no. 1, 134–139
- [7] Wieb Bosma, John Cannon, and Catherine Playoust, The Magma algebra system. I. The user language, J. Symbolic Comput. 24 (1997), no. 3-4, 235–265, Computational algebra and number theory (London, 1993).
- [8] Creative Commons CCO license, https://creativecommons.org/publicdomain/zero/1.0/ and https://creativecommons.org/publicdomain/zero/1.0/legalcode.
- [9] Tom Coates, Alessio Corti, Sergey Galkin, Vasily Golyshev, and Alexander M. Kasprzyk, Mirror symmetry and Fano manifolds, European Congress of Mathematics Kraków, 2–7 July, 2012, 2014, pp. 285–300.
- [10] Tom Coates, Alessio Corti, Sergey Galkin, and Alexander M. Kasprzyk, Quantum periods for 3-dimensional Fano manifolds, arXiv:1303.3288 [math.AG], 2013.
- [11] Tom Coates, Sergey Galkin, Alexander M. Kasprzyk, and Andrew Strangeway, Quantum periods for certain fourdimensional Fano manifolds, arXiv:1406.4891 [math.AG], 2014.
- [12] Alessio Corti (ed.), Flips for 3-folds and 4-folds, Oxford Lecture Series in Mathematics and its Applications, vol. 35, Oxford University Press, Oxford, 2007.
- [13] David A. Cox, John B. Little, and Henry K. Schenck, *Toric varieties*, Graduate Studies in Mathematics, vol. 124, American Mathematical Society, Providence, RI, 2011.
- [14] Takao Fujita, On the structure of polarized manifolds with total deficiency one. I, J. Math. Soc. Japan 32 (1980), no. 4, 709–725.
- [15] Takao Fujita, On the structure of polarized manifolds with total deficiency one. II, J. Math. Soc. Japan 33 (1981), no. 3, 415–434.
- [16] Takao Fujita, On the structure of polarized manifolds with total deficiency one. III, J. Math. Soc. Japan 36 (1984), no. 1, 75–89.
- [17] Takao Fujita, Classification theories of polarized varieties, London Mathematical Society Lecture Note Series, vol. 155, Cambridge University Press, Cambridge, 1990.
- [18] Sergey Galkin and Alexandr Usnich, Mutations of potentials, preprint IPMU 10-0100, 2010.
- [19] F. R. Gantmacher, The theory of matrices. Vols. 1, 2, Translated by K. A. Hirsch, Chelsea Publishing Co., New York, 1959.
- [20] Alexander Givental, A mirror theorem for toric complete intersections, Topological field theory, primitive forms and related topics (Kyoto, 1996), Progr. Math., vol. 160, Birkhäuser Boston, Boston, MA, 1998, pp. 141–175.
- [21] Christopher D. Hacon and James McKernan, Existence of minimal models for varieties of log general type. II, J. Amer. Math. Soc. 23 (2010), no. 2, 469–490.
- [22] Kentaro Hori, Sheldon Katz, Albrecht Klemm, Rahul Pandharipande, Richard Thomas, Cumrun Vafa, Ravi Vakil, and Eric Zaslow, Mirror symmetry, Clay Mathematics Monographs, vol. 1, American Mathematical Society, Providence, RI; Clay Mathematics Institute, Cambridge, MA, 2003, With a preface by Vafa.
- [23] Nathan Owen Ilten, Jacob Lewis, and Victor Przyjalkowski, Toric degenerations of Fano threefolds giving weak Landau-Ginzburg models, J. Algebra 374 (2013), 104–121.
- [24] V. A. Iskovskih, Fano threefolds. I, Izv. Akad. Nauk SSSR Ser. Mat. 41 (1977), no. 3, 516–562, 717.
- [25] V. A. Iskovskih, Fano threefolds. II, Izv. Akad. Nauk SSSR Ser. Mat. 42 (1978), no. 3, 506-549.
- [26] V. A. Iskovskih, Anticanonical models of three-dimensional algebraic varieties, Current problems in mathematics, Vol. 12 (Russian), VINITI, Moscow, 1979, pp. 59–157, 239 (loose errata).
- [27] V. A. Iskovskih, Anticanonical models of three-dimensional algebraic varieties, Current problems in mathematics, Vol. 12 (Russian), VINITI, Moscow, 1979, pp. 59–157, 239 (loose errata).
- [28] V. A. Iskovskikh and Yu. G. Prokhorov, Fano varieties, Algebraic geometry, V, Encyclopaedia Math. Sci., vol. 47, Springer, Berlin, 1999, pp. 1–247.
- [29] L. Katzarkov, Homological mirror symmetry and algebraic cycles, Homological mirror symmetry, Lecture Notes in Phys., vol. 757, Springer, Berlin, 2009, pp. 125–152.
- [30] Ludmil Katzarkov and Victor Przyjalkowski, Landau-Ginzburg models—old and new, Proceedings of the Gökova Geometry-Topology Conference 2011, Int. Press, Somerville, MA, 2012, pp. 97–124.
- [31] Kiran S. Kedlaya, *p-adic differential equations*, Cambridge Studies in Advanced Mathematics, vol. 125, Cambridge University Press, Cambridge, 2010.
- [32] Shoshichi Kobayashi and Takushiro Ochiai, Characterizations of complex projective spaces and hyperquadrics, J. Math. Kvoto Univ. 13 (1973), 31–47.
- [33] János Kollár, Yoichi Miyaoka, and Shigefumi Mori, Rational connectedness and boundedness of Fano manifolds, J. Differential Geom. 36 (1992), no. 3, 765–779.
- [34] Yános Kollár, Higher-dimensional Fano varieties of large index, Vestnik Moskov. Univ. Ser. I Mat. Mekh. (1981), no. 3, 31–34, 80–81.
- [35] Pierre Lairez, Computing periods of rational integrals, arXiv:1404.5069 [cs.SC], 2014. Source code available from https://github.com/lairez/periods, 2014.
- [36] Shigefumi Mori and Shigeru Mukai, Classification of Fano 3-folds with B₂ ≥ 2, Manuscripta Math. 36 (1981/82), no. 2, 147–162.
- [37] Shigefumi Mori and Shigeru Mukai, On Fano 3-folds with $B_2 \ge 2$, Algebraic varieties and analytic varieties (Tokyo, 1981), Adv. Stud. Pure Math., vol. 1, North-Holland, Amsterdam, 1983, pp. 101–129.

- [38] Shigefumi Mori and Shigeru Mukai, Classification of Fano 3-folds with $B_2 \ge 2$. I, Algebraic and topological theories (Kinosaki, 1984), Kinokuniya, Tokyo, 1986, pp. 496–545.
- [39] Shigefumi Mori and Shigeru Mukai, Erratum: "Classification of Fano 3-folds with $B_2 \ge 2$ " [Manuscripta Math. 36 (1981/82), no. 2, 147–162], Manuscripta Math. 110 (2003), no. 3, 407.
- [40] Shigefumi Mori and Shigeru Mukai, Extremal rays and Fano 3-folds, The Fano Conference, Univ. Torino, Turin, 2004, pp. 37–50.
- [41] Thomas Prince, Ph.D. thesis, Imperial College London, in preparation.
- [42] V. V. Przhiyalkovskiĭ, Weak Landau-Ginzburg models of smooth Fano threefolds, Izv. Ross. Akad. Nauk Ser. Mat. 77 (2013), no. 4, 135–160.
- [43] Victor Przyjalkowski, Hori-Vafa mirror models for complete intersections in weighted projective spaces and weak Landau-Ginzburg models, Cent. Eur. J. Math. 9 (2011), no. 5, 972-977.
- [44] Victor Przyjalkowski, personal communication, 2014.
- [45] Miles Reid, Update on 3-folds, Proceedings of the International Congress of Mathematicians, Vol. II (Beijing, 2002), Higher Ed. Press, Beijing, 2002, pp. 513–524.
- [46] Maria Ezia Serpico, Fano varieties of dimensions $n \ge 4$ and of index $r \ge n 1$, Rend. Sem. Mat. Univ. Padova **62** (1980), 295–308.
- [47] V. V. Shokurov, A nonvanishing theorem, Izv. Akad. Nauk SSSR Ser. Mat. 49 (1985), no. 3, 635–651.
- [48] Allan K. Steel, Computing with algebraically closed fields, J. Symbolic Comput. 45 (2010), no. 3, 342–372.
- [49] H. L. Turrittin, Convergent solutions of ordinary linear homogeneous differential equations in the neighborhood of an irregular singular point, Acta Math. 93 (1955), 27–66.
- [50] Mark van Hoeij, Factorization of differential operators with rational functions coefficients, J. Symbolic Comput. 24 (1997), no. 5, 537–561.
- [51] Duco van Straten, Calabi-Yau Operators Database, online, access via http://www.mathematik.uni-mainz.de/CYequations/db/.

APPENDIX A. REGULARIZED QUANTUM PERIOD SEQUENCES ARISING FROM COMPLETE INTERSECTIONS IN TORIC FANO MANIFOLDS

In this Appendix we record, for each of the toric complete intersections X considered in this paper, the description, degree, and first few terms of the regularized quantum period sequence for X, as well as a representative construction of X as a toric complete intersection. The regularized quantum period sequences, in lexicographic order, are shown in Table 2. If the description there is left blank then no Fano manifold with that regularized quantum period sequence was previously known; otherwise the descriptions are exactly as in [11, Appendix A]. The quantities $\alpha_0, \alpha_1, \ldots$ are Taylor coefficients of the regularized quantum period sequence: $\widehat{G}_X(t) = \sum_{d=0}^{\infty} \alpha_d t^d$. Ten terms of the Taylor expansion suffices to distinguish all the regularized quantum periods in Table 2: see the discussion and supplementary table on page 38. Tables 3, 4, 5, 6, and 7 contain constructions of our Fano manifolds X as toric complete intersections, together with the description, degree, Euler number, and first two terms of the Hilbert series for X.

Table 2: 738 regularized period sequences obtained from 4-dimensional Fano manifolds that arise as complete intersections in toric Fano manifolds.

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	$lpha_4$	$lpha_5$	$lpha_6$	α_7
1	\mathbb{P}^4	625	1	0	0	0	0	120	0	0
2	BOS_{115}^4	512	1	0	0	0	24	120	0	0
3	Q^4	512	1	0	0	0	48	0	0	0
4		431	1	0	0	0	48	120	0	0
5		376	1	0	0	0	72	120	0	0
6		341	1	0	0	0	96	120	0	0
7	BOS_{21}^4	594	1	0	0	6	0	0	90	1260
8	BOS_{118}^4	513	1	0	0	6	0	120	90	0
9	BOS_{17}^4	450	1	0	0	6	0	120	90	1260
10	BOS_{47}^4	513	1	0	0	6	24	0	90	2520
11	BOS_{94}^4	459	1	0	0	6	24	120	90	1260
12	BOS_{37}^4	417	1	0	0	6	24	120	90	2520
13	BOS_{74}^4	486	1	0	0	6	48	0	90	2520
14		432	1	0	0	6	48	0	90	3780
15	BOS_{86}^4	405	1	0	0	6	48	120	90	2520
16		384	1	0	0	6	48	120	90	3780
17		353	1	0	0	6	48	120	90	5040
18		351	1	0	0	6	72	120	90	5040
19		335	1	0	0	6	72	120	90	6300
20	$\mathbb{P}^2\times\mathbb{P}^2$	486	1	0	0	12	0	0	900	0
21	BOS_{114}^4	401	1	0	0	12	0	120	900	0

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	$lpha_3$	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
22		338	1	0	0	12	0	240	900	1260
23	BOS_{46}^4	406	1	0	0	12	24	0	900	3780
24	BOS_{87}^4	364	1	0	0	12	24	120	900	3780
25	BOS_{32}^4	322	1	0	0	12	24	240	900	5040
26		378	1	0	0	12	48	0	540	7560
27	BOS_{30}^4	327	1	0	0	12	48	120	900	7560
28		230	1	0	0	12	48	480	900	15120
29		330	1	0	0	12	72	120	540	10080
30		297	1	0	0	12	96	120	540	15120
31	BOS_{31}^4	249	1	0	0	18	72	360	2430	18900
32		281	1	0	0	18	96	120	1350	22680
33	FI_4^4	324	1	0	0	24	0	0	3240	0
34		292	1	0	0	24	48	0	3240	15120
35		261	1	0	0	24	96	120	3240	30240
36		244	1	0	0	24	120	120	3240	40320
37	FI_3^4	243	1	0	0	36	0	0	8100	0
38		242	1	0	0	36	48	0	8100	22680
39		211	1	0	0	36	144	120	8100	75600
40		179	1	0	0	54	168	120	20250	136080
41		161	1	0	0	72	192	120	37800	211680
42	BOS_2^4	800	1	0	2	0	6	0	20	840
43	MW^4_{15}	640	1	0	2	0	6	0	380	0
44	BOS_1^4	605	1	0	2	0	6	0	380	840
45	BOS_{12}^4	560	1	0	2	0	6	60	380	840
46		624	1	0	2	0	6	120	20	1680
47	BOS_{121}^4	544	1	0	2	0	6	120	20	2520
48	BOS_{105}^4	489	1	0	2	0	6	120	380	2520
49		464	1	0	2	0	6	180	20	3360
50		446	1	0	2	0	6	180	380	3360
51	$\mathbb{P}^1\times\mathbb{P}^3$	512	1	0	2	0	30	0	740	0
52	BOS_{18}^4	529	1	0	2	0	30	60	380	840

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	$lpha_3$	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
53	BOS_{10}^4	496	1	0	2	0	30	60	740	840
54	BOS_{109}^4	464	1	0	2	0	30	120	380	2520
55	BOS_{104}^4	431	1	0	2	0	30	120	740	2520
56	BOS_{15}^4	433	1	0	2	0	30	180	380	3360
57	BOS_{11}^4	415	1	0	2	0	30	180	740	3360
58		376	1	0	2	0	30	240	1100	5040
59		341	1	0	2	0	30	360	1820	8400
60	MW_{13}^4	480	1	0	2	0	54	0	740	0
61	MW^4_{12}	416	1	0	2	0	54	0	1100	0
62		370	1	0	2	0	54	60	1100	840
63		430	1	0	2	0	54	120	740	1680
64		400	1	0	2	0	54	120	740	2520
65		383	1	0	2	0	54	120	1100	2520
66		352	1	0	2	0	54	180	1100	3360
67		350	1	0	2	0	54	240	1460	5040
68		345	1	0	2	0	78	120	1460	2520
69		295	1	0	2	0	78	480	2540	10080
70		240	1	0	2	0	150	960	5060	20160
71		170	1	0	2	0	486	3600	18740	77280
72	BOS_8^4	576	1	0	2	6	6	60	110	1680
73	BOS_{26}^4	560	1	0	2	6	6	60	470	420
74	BOS_7^4	592	1	0	2	6	6	120	110	1260
75	BOS_{20}^4	400	1	0	2	6	6	120	830	2520
76	BOS_{111}^4	480	1	0	2	6	6	180	110	2940
77	BOS_{24}^4	442	1	0	2	6	6	180	470	2940
78		432	1	0	2	6	6	240	110	3780
79	BOS_{106}^4	496	1	0	2	6	30	60	470	2940
80	BOS_{45}^4	432	1	0	2	6	30	60	830	2940
81	BOS_{41}^4	433	1	0	2	6	30	120	470	3780
82	BOS_6^4	463	1	0	2	6	30	120	470	3780
83	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-33}$	432	1	0	2	6	30	120	830	2520

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	α_4	$lpha_5$	$lpha_6$	α_7
84	BOS_{82}^4	432	1	0	2	6	30	180	470	4200
85	BOS_{113}^4	400	1	0	2	6	30	180	470	5460
86	BOS_{92}^4	384	1	0	2	6	30	180	830	5460
87	BOS_{70}^4	411	1	0	2	6	30	240	470	5040
88		369	1	0	2	6	30	240	470	6300
89		378	1	0	2	6	30	240	830	5040
90	BOS_{16}^4	337	1	0	2	6	30	240	1190	7560
91	BOS_{52}^4	464	1	0	2	6	54	60	830	2940
92		416	1	0	2	6	54	60	830	4200
93		384	1	0	2	6	54	60	1190	4200
94	$BØS_{71}^4$	390	1	0	2	6	54	120	1190	3780
95		353	1	0	2	6	54	120	1190	5040
96	BOS_{91}^4	384	1	0	2	6	54	180	830	5460
97	BOS_{13}^4	368	1	0	2	6	54	180	830	5880
98		357	1	0	2	6	54	180	1190	6720
99		336	1	0	2	6	54	180	1190	7980
100	BOS_{81}^4	357	1	0	2	6	54	240	1190	6300
101		336	1	0	2	6	54	240	1190	7560
102		324	1	0	2	6	54	360	1550	8820
103		336	1	0	2	6	78	180	1190	7980
104		303	1	0	2	6	78	360	1910	11340
105		308	1	0	2	6	78	420	1910	10920
106		272	1	0	2	6	102	420	2270	14700
107		270	1	0	2	6	102	600	2990	17640
108		254	1	0	2	6	126	660	3350	21000
109		480	1	0	2	12	6	120	920	840
110	$\mathbb{P}^2 \times F_1$	432	1	0	2	12	6	180	920	1680
111	$\mathbb{P}^1 \times Q^3$	432	1	0	2	12	6	240	560	2520
112	BOS_{27}^4	417	1	0	2	12	6	240	560	3360
113		368	1	0	2	12	6	300	920	4200
114		352	1	0	2	12	6	360	560	5040

Continued on next page.

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	α_4	$lpha_5$	$lpha_6$	$lpha_7$
115		320	1	0	2	12	6	420	920	7980
116	BOS_{60}^4	448	1	0	2	12	30	120	920	4620
117	BOS_{88}^4	389	1	0	2	12	30	180	1280	5460
118	BOS_{35}^4	369	1	0	2	12	30	180	1280	5460
119		352	1	0	2	12	30	180	1640	5460
120	$\mathbb{P}^1 \times MM^3_{2-30}$	368	1	0	2	12	30	240	1280	5040
121	BOS_{93}^4	347	1	0	2	12	30	300	1280	7980
122		335	1	0	2	12	30	360	1280	7560
123		305	1	0	2	12	30	420	1280	11760
124		368	1	0	2	12	54	120	1280	8400
125		352	1	0	2	12	54	120	1640	8400
126		336	1	0	2	12	54	180	1640	9240
127	BOS_{85}^4	352	1	0	2	12	54	240	1280	9660
128		346	1	0	2	12	54	240	1280	10080
129	BOS_{42}^4	326	1	0	2	12	54	240	1640	10080
130		310	1	0	2	12	54	300	2000	11760
131		299	1	0	2	12	54	360	1640	12600
132		289	1	0	2	12	54	420	2000	15540
133		284	1	0	2	12	54	480	2360	16380
134		304	1	0	2	12	78	240	2000	14700
135		309	1	0	2	12	78	300	2000	14280
136		273	1	0	2	12	78	300	2720	16800
137		299	1	0	2	12	78	360	2000	15120
138		282	1	0	2	12	78	480	2360	17640
139		288	1	0	2	12	102	240	2000	18480
140		296	1	0	2	12	102	360	2000	19320
141		282	1	0	2	12	102	480	2720	20160
142		266	1	0	2	12	102	480	2720	22680
143		212	1	0	2	12	102	720	3800	35280
144		249	1	0	2	12	126	720	3800	30240
145		216	1	0	2	12	198	1200	6320	52920

17

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	$lpha_3$	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
146	$BØS_{51}^4$	480	1	0	2	18	6	180	1370	1260
147		384	1	0	2	18	6	240	1730	2100
148		362	1	0	2	18	30	240	2090	7140
149	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-28}$	320	1	0	2	18	30	360	2090	7560
150		302	1	0	2	18	30	480	2090	10080
151	$BØS_{73}^4$	352	1	0	2	18	54	180	2090	11340
152		304	1	0	2	18	54	240	2810	13440
153		304	1	0	2	18	78	300	2450	18900
154		283	1	0	2	18	78	360	3170	21000
155		256	1	0	2	18	102	360	3890	28560
156		218	1	0	2	18	174	900	5330	56280
157		200	1	0	2	18	246	1380	7850	85260
158		320	1	0	2	24	6	240	3260	1680
159		304	1	0	2	24	6	360	3260	3360
160		272	1	0	2	24	6	540	3260	6720
161		282	1	0	2	24	54	360	3980	18480
162		256	1	0	2	24	54	540	4340	21840
163		256	1	0	2	24	102	420	4700	35280
164		260	1	0	2	24	102	480	4700	35280
165		229	1	0	2	24	126	660	5780	49560
166		230	1	0	2	24	150	720	6140	55440
167		213	1	0	2	24	174	960	7220	70560
168		196	1	0	2	24	246	1440	9740	105840
169		240	1	0	2	36	6	360	8120	2520
170		224	1	0	2	36	6	720	8120	8400
171		202	1	0	2	36	150	840	11000	86520
172		180	1	0	2	36	294	1680	15320	178920
173		184	1	0	2	36	342	1800	14240	188160
174		163	1	0	2	36	438	2640	20360	287280
175		192	1	0	2	42	150	900	14690	99540
176		160	1	0	2	72	390	1680	43580	441840

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	α_4	$lpha_5$	$lpha_6$	$lpha_7$
177		130	1	0	2	72	870	5280	62300	1154160
178		116	1	0	2	108	1062	6120	121880	2115960
179		98	1	0	2	180	1926	11400	335360	6709920
180	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-36}$	496	1	0	4	0	36	60	400	3360
181	BOS_{43}^4	464	1	0	4	0	36	120	400	5040
182		304	1	0	4	0	36	360	400	16800
183	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-35}$	448	1	0	4	0	60	0	1480	0
184	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-29}$	400	1	0	4	0	60	60	1480	3360
185	BOS_{36}^4	384	1	0	4	0	60	120	1480	5040
186	MW_{10}^4	352	1	0	4	0	84	0	2560	0
187		320	1	0	4	0	84	240	2560	10080
188		274	1	0	4	0	84	360	2560	16800
189	$ m MW_7^4$	320	1	0	4	0	108	0	3280	0
190	BOS_3^4	558	1	0	4	6	36	120	490	3360
191	BOS_{22}^4	505	1	0	4	6	36	120	850	2100
192	BOS_5^4	478	1	0	4	6	36	180	490	5460
193	BOS_9^4	382	1	0	4	6	36	180	1210	6720
194	BOS_{95}^4	447	1	0	4	6	36	240	490	7140
195	$\mathbb{P}^2\times\mathbb{P}^1\times\mathbb{P}^1$	432	1	0	4	6	36	240	490	7560
196	BOS_{25}^4	409	1	0	4	6	36	240	850	7140
197		400	1	0	4	6	36	300	490	9240
198		286	1	0	4	6	36	480	1930	20160
199	BOS_{100}^4	415	1	0	4	6	60	120	1570	4620
200	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-30}$	400	1	0	4	6	60	180	1570	5460
201	BOS_{34}^4	369	1	0	4	6	60	180	1570	6720
202	BOS_{56}^4	405	1	0	4	6	60	240	1210	8400
203		353	1	0	4	6	60	240	1210	10080
204	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-26}$	368	1	0	4	6	60	240	1570	8820
205	BOS_{102}^4	367	1	0	4	6	60	240	1570	9660
206	BOS_{44}^4	351	1	0	4	6	60	240	1930	9660
207		352	1	0	4	6	60	300	1210	11760

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	α_4	$lpha_5$	$lpha_6$	α_7
208		352	1	0	4	6	60	300	1570	10500
209		331	1	0	4	6	60	360	1570	13860
210		329	1	0	4	6	60	360	1930	14700
211	BOS_{48}^4	442	1	0	4	6	84	120	1930	4620
212		368	1	0	4	6	84	120	2290	5880
213		368	1	0	4	6	84	180	2290	6720
214		326	1	0	4	6	84	240	2650	10080
215		319	1	0	4	6	84	240	2650	12180
216	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-22}$	320	1	0	4	6	84	300	2650	13440
217	BOS_{29}^4	310	1	0	4	6	84	360	2650	15120
218		303	1	0	4	6	84	360	3010	17220
219		304	1	0	4	6	84	420	2650	16800
220		274	1	0	4	6	108	240	3370	13860
221		281	1	0	4	6	108	240	4090	14700
222		288	1	0	4	6	108	300	3370	15540
223		248	1	0	4	6	132	600	4810	29400
224		256	1	0	4	6	132	660	4810	30660
225	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-31}$	416	1	0	4	12	36	360	940	8400
226	$F_1 \times F_1$	384	1	0	4	12	36	360	1300	8400
227	$S_7^2 \times \mathbb{P}^2$	378	1	0	4	12	36	360	1300	9660
228	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-31}$	368	1	0	4	12	36	420	940	11760
229		362	1	0	4	12	36	420	1300	11340
230		336	1	0	4	12	36	480	1300	13440
231		335	1	0	4	12	36	480	1300	14700
232		302	1	0	4	12	36	600	1300	21000
233		272	1	0	4	12	36	720	940	25200
234	BOS_{54}^4	405	1	0	4	12	60	300	1660	10080
235	$\mathrm{B}\mathrm{\emptyset}\mathrm{S}^4_{58}$	373	1	0	4	12	60	300	2020	10080
236	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-25}$	352	1	0	4	12	60	360	2020	10920
237	BOS_{66}^4	332	1	0	4	12	60	360	2020	13440
238		321	1	0	4	12	60	360	2380	12180

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	$lpha_4$	$lpha_5$	$lpha_6$	α_7
239		335	1	0	4	12	60	360	2380	13440
240	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-23}$	336	1	0	4	12	60	420	2020	14280
241	BOS_{28}^4	321	1	0	4	12	60	420	2020	16380
242		321	1	0	4	12	60	480	1660	17220
243		320	1	0	4	12	60	480	2020	17220
244		314	1	0	4	12	60	480	2380	18480
245		289	1	0	4	12	60	540	1660	21840
246		309	1	0	4	12	60	540	2020	19320
247		288	1	0	4	12	60	600	2020	23520
248		304	1	0	4	12	84	360	3100	15960
249		290	1	0	4	12	84	360	3100	15960
250	BOS_{65}^4	331	1	0	4	12	84	420	2380	17640
251	BOS_{80}^4	325	1	0	4	12	84	420	2740	17640
252		304	1	0	4	12	84	420	3100	18900
253		289	1	0	4	12	84	420	3100	19320
254		302	1	0	4	12	84	420	3460	20580
255		304	1	0	4	12	84	480	2740	19740
256	$\mathbb{P}^1 \times MM^3_{3-19}$	304	1	0	4	12	84	480	3100	20160
257		289	1	0	4	12	84	480	3100	21000
258		293	1	0	4	12	84	480	3460	22260
259		272	1	0	4	12	84	600	3460	28560
260		277	1	0	4	12	84	600	3820	27300
261		266	1	0	4	12	84	660	4180	31920
262		252	1	0	4	12	84	720	3100	32760
263		294	1	0	4	12	108	360	3820	18480
264		257	1	0	4	12	108	540	3820	29400
265		277	1	0	4	12	108	540	4180	27720
266		262	1	0	4	12	108	600	4180	31080
267		241	1	0	4	12	108	720	4180	38640
268		256	1	0	4	12	108	720	4900	37380
269		256	1	0	4	12	132	600	4900	33600

Period ID	Description	$(-K_X)^4$	$lpha_0$	α_1	α_2	α_3	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
270		252	1	0	4	12	132	720	5260	37800
271		230	1	0	4	12	132	960	7060	52920
272		194	1	0	4	12	180	1200	9940	76860
273	BOS_{50}^4	394	1	0	4	18	36	480	1750	10500
274	BOS_{68}^4	363	1	0	4	18	36	480	2110	10500
275		331	1	0	4	18	36	540	2110	13860
276	BOS_{59}^4	341	1	0	4	18	60	480	2830	15540
277	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-27}$	304	1	0	4	18	60	600	2830	19740
278		299	1	0	4	18	60	660	2830	22680
279		255	1	0	4	18	60	840	3910	32340
280	BOS_{53}^4	330	1	0	4	18	84	480	3190	20580
281	BOS_{69}^4	310	1	0	4	18	84	480	3550	20580
282		288	1	0	4	18	84	540	3910	25200
283	BOS_{84}^4	299	1	0	4	18	84	600	3550	25620
284		271	1	0	4	18	84	720	4630	32340
285		257	1	0	4	18	84	780	4270	34020
286		283	1	0	4	18	108	600	4270	30660
287		277	1	0	4	18	108	600	4630	31920
288		262	1	0	4	18	108	660	4990	34020
289		257	1	0	4	18	108	720	4990	38220
290		257	1	0	4	18	108	780	4990	39060
291		256	1	0	4	18	108	780	5350	40320
292		256	1	0	4	18	132	780	5350	42840
293		240	1	0	4	18	132	840	5710	48720
294		235	1	0	4	18	132	960	7150	55020
295		219	1	0	4	18	132	960	7510	57540
296		225	1	0	4	18	156	840	7150	56280
297		229	1	0	4	18	156	1020	7870	63000
298		195	1	0	4	18	180	1080	9310	77700
299		288	1	0	4	24	36	720	3640	16800

Continued on next page.

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
300		240	1	0	4	24	36	1080	3640	33600
301		256	1	0	4	24	84	720	5800	31920
302		230	1	0	4	24	84	1080	5800	48720
303		220	1	0	4	24	108	1080	6520	58800
304		241	1	0	4	24	132	840	6880	53340
305		235	1	0	4	24	156	960	7960	63420
306		215	1	0	4	24	156	1080	9040	72240
307		208	1	0	4	24	204	1260	10480	95760
308		200	1	0	4	24	228	1440	12280	110880
309		266	1	0	4	30	84	840	6610	36540
310		224	1	0	4	30	84	1200	8050	54600
311		235	1	0	4	30	132	960	8770	61740
312		203	1	0	4	30	156	1320	11650	92400
313		208	1	0	4	30	228	1440	12370	116340
314		192	1	0	4	36	36	1800	8500	58800
315		208	1	0	4	36	84	1440	10660	64680
316		208	1	0	4	36	156	1200	12820	90720
317	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-9}$	208	1	0	4	36	228	1560	15340	122640
318		176	1	0	4	36	324	2160	20740	223440
319		193	1	0	4	42	156	1680	16510	119700
320		176	1	0	4	42	180	2040	19390	155400
321		177	1	0	4	42	252	2040	21190	196980
322		160	1	0	4	60	204	2640	33340	231840
323		144	1	0	4	60	564	4140	49900	648480
324	BOS_{38}^4	385	1	0	6	0	90	120	1860	7560
325	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-32}$	384	1	0	6	0	114	0	3300	0
326	MW_8^4	320	1	0	6	0	138	0	4740	0
327	MW_5^4	256	1	0	6	0	186	0	7980	0
328	$\mathbb{P}^1 \times \mathbb{P}^1 \times F_1$	384	1	0	6	6	90	300	1950	13020
329	$\mathbb{P}^1 \times \mathrm{MM}^3_{4-13}$	368	1	0	6	6	114	240	3390	9660
330	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-24}$	336	1	0	6	6	114	300	3390	14280

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	$lpha_4$	$lpha_5$	$lpha_6$	α_7
331		306	1	0	6	6	114	300	3390	15540
332		320	1	0	6	6	114	360	3390	18480
333	BOS_{33}^4	305	1	0	6	6	114	360	3750	18480
334		304	1	0	6	6	138	300	4830	15540
335		288	1	0	6	6	138	360	4830	21000
336		250	1	0	6	6	186	360	8070	24780
337	BOS_4^4	364	1	0	6	12	90	420	2760	17220
338	BOS_{23}^4	354	1	0	6	12	90	480	2760	20160
339	$\mathbb{P}^1 \times \mathrm{MM}^3_{4-12}$	352	1	0	6	12	90	540	2400	21420
340	$S_7^2 \times F_1$	336	1	0	6	12	90	540	2760	21420
341	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-29}$	320	1	0	6	12	90	600	2400	26040
342		268	1	0	6	12	90	720	4920	44520
343		258	1	0	6	12	90	840	2400	41160
344	BOS_{96}^4	334	1	0	6	12	114	480	3840	22680
345	$\mathbb{P}^1 \times \mathrm{MM}^3_{4-10}$	320	1	0	6	12	114	540	3840	23940
346	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-20}$	304	1	0	6	12	114	600	3840	28560
347		293	1	0	6	12	114	660	3840	32760
348		288	1	0	6	12	114	660	4200	32760
349		282	1	0	6	12	114	720	4200	36960
350		294	1	0	6	12	138	480	5280	24360
351	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-17}$	288	1	0	6	12	138	600	5280	31080
352		272	1	0	6	12	138	600	5280	33600
353		258	1	0	6	12	138	600	5640	33600
354		286	1	0	6	12	138	600	5640	35280
355		278	1	0	6	12	138	660	5280	35280
356		272	1	0	6	12	138	660	5640	36540
357		256	1	0	6	12	138	780	5640	45360
358		242	1	0	6	12	138	840	5280	48720
359		228	1	0	6	12	162	600	7080	38640
360		256	1	0	6	12	162	720	7080	44520
361		225	1	0	6	12	186	720	8520	51240

25

Period ID	Description	$(-K_X)^4$	$lpha_0$	α_1	α_2	α_3	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
362		210	1	0	6	12	186	900	8520	64680
363		224	1	0	6	12	186	900	8880	63000
364		210	1	0	6	12	234	1320	14280	105840
365	$S_6^2 \times \mathbb{P}^2$	324	1	0	6	18	90	720	3570	28980
366		330	1	0	6	18	90	780	3210	29820
367		293	1	0	6	18	114	780	5010	34860
368	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-18}$	288	1	0	6	18	114	840	4650	38220
369		267	1	0	6	18	114	960	5010	47040
370	BOS_{57}^4	298	1	0	6	18	138	780	5730	39480
371		288	1	0	6	18	138	780	5730	39900
372		278	1	0	6	18	138	780	6090	39900
373	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-16}$	272	1	0	6	18	138	900	6090	46620
374		272	1	0	6	18	138	900	6090	47460
375		258	1	0	6	18	138	900	6090	48720
376		261	1	0	6	18	138	960	5730	52080
377		260	1	0	6	18	138	960	7170	56700
378		246	1	0	6	18	162	960	7530	58380
379		226	1	0	6	18	162	1020	8250	64260
380		240	1	0	6	18	162	1080	8250	65940
381		239	1	0	6	18	162	1080	8970	71820
382		236	1	0	6	18	186	1080	8970	69720
383		226	1	0	6	18	186	1140	8970	74340
384		230	1	0	6	18	186	1140	9690	76440
385		212	1	0	6	18	186	1560	13650	118860
386		176	1	0	6	18	282	2340	23010	206640
387		268	1	0	6	24	90	1080	5100	42840
388	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-25}$	256	1	0	6	24	114	1200	5820	57120
389	BOS_{49}^4	308	1	0	6	24	138	960	6180	46200
390	$\mathrm{B}\mathrm{\emptyset}\mathrm{S}^4_{55}$	298	1	0	6	24	138	960	6540	46200
391	BOS_{63}^4	278	1	0	6	24	138	1080	6540	53760
392		246	1	0	6	24	138	1080	7980	57960

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	α_4	$lpha_5$	$lpha_6$	α_7
393		245	1	0	6	24	138	1260	7980	67620
394		238	1	0	6	24	138	1320	9060	78120
395		220	1	0	6	24	138	1440	7980	82320
396	BOS_{64}^4	268	1	0	6	24	162	960	7980	53760
397		251	1	0	6	24	162	1140	8700	67200
398		226	1	0	6	24	162	1320	9420	80640
399		230	1	0	6	24	162	1320	9780	80640
400		250	1	0	6	24	186	1200	9780	76440
401		224	1	0	6	24	186	1200	10860	82320
402	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-24}$	240	1	0	6	24	186	1260	10140	78120
403		230	1	0	6	24	186	1320	10500	85680
404		218	1	0	6	24	186	1560	12660	110880
405		208	1	0	6	24	210	1440	11940	107520
406		214	1	0	6	24	210	1500	12660	107940
407		209	1	0	6	24	210	1620	13020	115500
408		202	1	0	6	24	234	1920	16980	153720
409		178	1	0	6	24	282	1920	19140	169260
410		186	1	0	6	24	282	2280	21300	199080
411		214	1	0	6	30	210	1620	13470	116340
412		209	1	0	6	30	210	1740	14550	126420
413		204	1	0	6	30	234	1680	15270	133560
414		188	1	0	6	30	234	1980	16710	159600
415		194	1	0	6	30	282	1980	18150	168420
416		188	1	0	6	30	282	2160	19950	186480
417		244	1	0	6	36	186	1560	12480	97440
418		208	1	0	6	36	186	1920	15360	131880
419		198	1	0	6	36	186	2040	15720	138600
420		173	1	0	6	36	186	2520	16080	180600
421		199	1	0	6	36	210	1800	16440	136920
422		214	1	0	6	36	234	1800	16080	137760
423		177	1	0	6	36	306	2280	23280	221760

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	$lpha_3$	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
424		176	1	0	6	36	330	2880	27600	278040
425		166	1	0	6	36	330	3240	30480	312480
426		166	1	0	6	36	378	3480	34080	352800
427		187	1	0	6	42	306	2460	24090	229320
428		172	1	0	6	42	306	2820	26970	270060
429		178	1	0	6	48	282	2760	27420	253680
430		176	1	0	6	48	282	2760	28500	257040
431		172	1	0	6	48	282	3600	32820	309120
432		160	1	0	6	48	426	3360	37860	406560
433		149	1	0	6	48	522	4800	51180	595560
434		140	1	0	6	48	570	5880	60180	711480
435		162	1	0	6	54	378	3480	38670	392700
436		151	1	0	6	60	354	4080	44520	441840
437		160	1	0	6	60	474	3960	45600	503160
438		145	1	0	6	66	474	4860	57930	637560
439		112	1	0	6	120	1146	11280	192300	2817360
440	$\mathbb{P}^1\times\mathbb{P}^1\times\mathbb{P}^1\times\mathbb{P}^1$	384	1	0	8	0	168	0	5120	0
441	BOS_{39}^4	307	1	0	8	0	168	120	5120	10080
442	$S_7^2 \times \mathbb{P}^1 \times \mathbb{P}^1$	336	1	0	8	6	168	360	5210	19740
443	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-21}$	304	1	0	8	6	192	360	7010	21000
444		282	1	0	8	6	216	360	8810	22260
445	$\mathbb{P}^1 \times \mathrm{MM}^3_{4-9}$	304	1	0	8	12	168	720	5660	39480
446	$S_7^2 \times S_7^2$	294	1	0	8	12	168	720	6020	39480
447	$\mathbb{P}^1 \times \mathrm{MM}^3_{4-8}$	288	1	0	8	12	192	720	7460	42000
448		256	1	0	8	12	216	840	9620	57960
449		208	1	0	8	12	288	1080	16100	92400
450		186	1	0	8	12	360	1200	23300	117600
451	$S_6^2 \times F_1$	288	1	0	8	18	168	1020	6830	54600
452		282	1	0	8	18	168	1080	6470	59220
453	$\mathbb{P}^1 \times \mathrm{MM}^3_{5-2}$	288	1	0	8	18	192	1020	7910	57120
454	$\mathbb{P}^1 \times \mathrm{MM}^3_{4-7}$	272	1	0	8	18	192	1080	8270	63000

27

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
455		256	1	0	8	18	216	1080	10070	69300
456	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-15}$	256	1	0	8	18	216	1140	10070	72660
457		246	1	0	8	18	216	1200	10430	79380
458		240	1	0	8	18	216	1260	11150	87360
459		224	1	0	8	18	240	1380	13310	105000
460		252	1	0	8	24	168	1440	8360	78960
461	$\mathbb{P}^1 \times \mathrm{MM}^3_{4-5}$	256	1	0	8	24	216	1440	10880	89040
462		192	1	0	8	24	216	2160	11240	168000
463	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-13}$	240	1	0	8	24	240	1560	13040	105840
464		230	1	0	8	24	240	1560	13400	110460
465		219	1	0	8	24	240	1740	13760	126420
466		220	1	0	8	24	264	1680	15200	126840
467		214	1	0	8	24	264	1740	15920	133980
468		208	1	0	8	24	264	1920	17360	154560
469		204	1	0	8	24	288	1920	18440	159600
470		192	1	0	8	24	312	2160	22040	194880
471		230	1	0	8	30	216	1800	13490	116340
472	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-11}$	224	1	0	8	30	264	1980	16370	142800
473		224	1	0	8	30	264	1980	16730	147000
474		204	1	0	8	30	264	2160	17090	165900
475		192	1	0	8	30	312	2580	23930	229320
476		209	1	0	8	36	264	2280	19340	173880
477		182	1	0	8	36	264	2880	20420	232680
478		197	1	0	8	36	288	2700	21500	216720
479		203	1	0	8	36	312	2520	22940	210420
480		188	1	0	8	36	312	2760	24380	239820
481		188	1	0	8	36	336	2760	26180	251160
482		184	1	0	8	36	360	2760	27260	261240
483		182	1	0	8	36	360	2940	28340	277200
484		182	1	0	8	36	360	3060	29780	295680
485		176	1	0	8	36	360	3300	31220	320040

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	$lpha_3$	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
486		162	1	0	8	36	408	3360	35180	358680
487		161	1	0	8	36	432	3780	39500	413280
488		160	1	0	8	48	264	4320	27440	366240
489	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-18}$	192	1	0	8	48	360	3360	31040	295680
490		167	1	0	8	48	408	3960	38960	410760
491		156	1	0	8	48	504	4800	51560	572040
492		141	1	0	8	48	504	4920	53000	613200
493		161	1	0	8	54	360	4200	39770	406980
494		151	1	0	8	54	480	5160	53810	608580
495		151	1	0	8	60	360	5160	45260	514080
496		148	1	0	8	60	552	5280	60740	685440
497		130	1	0	8	72	792	8460	104120	1339800
498		129	1	0	8	84	408	8040	78740	887040
499	BOS_{40}^4	230	1	0	10	0	270	240	10900	25200
500	$\mathbb{P}^1 imes B_4^3$	256	1	0	10	0	318	0	15220	0
501	$S_6^2 \times \mathbb{P}^1 \times \mathbb{P}^1$	288	1	0	10	12	270	840	11080	55440
502	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-23}$	240	1	0	10	12	318	960	15760	74760
503		218	1	0	10	12	366	960	20800	82320
504	$S_6^2 \times S_7^2$	252	1	0	10	18	270	1320	12610	91560
505	$\mathbb{P}^1 \times \mathrm{MM}^3_{4-4}$	240	1	0	10	24	318	1800	17380	135240
506		188	1	0	10	24	318	2400	18460	215040
507		180	1	0	10	24	462	2640	35740	287280
508	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-12}$	224	1	0	10	30	342	2340	21070	186060
509	$\mathbb{P}^1 \times MM_{2-19}^3$	208	1	0	10	30	342	2520	21430	208740
510		204	1	0	10	30	366	2520	24670	221760
511		176	1	0	10	30	462	2760	35110	290640
512	$\mathbb{P}^2 imes S_5^2$	270	1	0	10	36	270	2160	15040	134400
513		208	1	0	10	36	366	2760	25840	235200
514		206	1	0	10	36	366	2880	28000	271740
515		202	1	0	10	36	366	3000	26200	260400
516		198	1	0	10	36	390	3000	28720	273000

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
517		188	1	0	10	36	414	3180	31960	306600
518		172	1	0	10	36	414	3480	33400	351960
519		158	1	0	10	36	510	5280	62560	712320
520		188	1	0	10	42	414	3480	33850	334320
521		185	1	0	10	42	414	3840	38530	407820
522		172	1	0	10	42	462	4080	41770	436800
523		182	1	0	10	48	414	4080	36460	387240
524		172	1	0	10	48	414	4320	38260	425040
525		182	1	0	10	48	462	4200	41140	425880
526		172	1	0	10	48	486	4320	44740	465360
527		162	1	0	10	48	534	4920	53020	578760
528		156	1	0	10	48	558	5280	57700	646800
529		167	1	0	10	54	486	4920	49150	534240
530		146	1	0	10	54	582	5580	63910	711060
531		146	1	0	10	54	606	6180	68230	805140
532		150	1	0	10	60	510	6120	59680	714000
533		146	1	0	10	60	654	6840	77680	924840
534		144	1	0	10	60	654	7080	77320	945840
535		140	1	0	10	66	750	7920	93970	1156680
536		133	1	0	10	66	846	10080	125290	1619940
537		122	1	0	10	66	1038	13200	168850	2289000
538		142	1	0	10	72	558	7200	74620	890400
539		136	1	0	10	72	726	8280	97660	1212120
540		130	1	0	10	72	846	9360	113860	1475880
541		130	1	0	10	78	750	8700	107110	1328880
542		125	1	0	10	78	846	10140	124030	1643880
543		140	1	0	10	84	750	8520	102880	1244040
544		128	1	0	10	96	702	10560	124660	1538880
545		98	1	0	10	168	1566	23040	402940	6002640
546	$S_6^2 \times S_6^2$	216	1	0	12	24	396	2160	23160	186480
547	$\mathbb{P}^1 \times \mathrm{MM}^3_{4-3}$	224	1	0	12	24	444	2160	26760	191520

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	$lpha_3$	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
548	$F_1 \times S_5^2$	240	1	0	12	36	396	2820	24060	219240
549	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-10}$	208	1	0	12	36	492	3360	35220	319200
550		192	1	0	12	36	492	3540	38460	371700
551		144	1	0	12	36	540	5400	41700	705600
552		176	1	0	12	42	540	4560	49710	528360
553	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-7}$	192	1	0	12	48	564	4680	48000	486360
554		172	1	0	12	48	588	5040	54480	577920
555		168	1	0	12	48	588	5040	55200	588000
556		176	1	0	12	60	636	6000	64020	698460
557	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-16}$	176	1	0	12	60	636	6120	63300	693000
558		152	1	0	12	60	684	6840	77340	898800
559		156	1	0	12	60	708	6840	77700	893760
560		144	1	0	12	60	780	8400	101460	1254960
561		134	1	0	12	72	708	9120	93000	1254960
562		146	1	0	12	72	780	8340	97320	1178520
563		136	1	0	12	72	876	9600	118200	1501920
564		131	1	0	12	78	876	10440	125490	1649340
565		124	1	0	12	90	1116	13860	184350	2553600
566		112	1	0	12	108	756	16320	155100	2494800
567	$\mathbb{P}^1 \times B_3^3$	192	1	0	14	0	690	0	50900	0
568	$\mathbb{P}^1 \times \mathbb{P}^1 \times S_5^2$	240	1	0	14	30	546	2760	33350	246540
569	$S_7^2 \times S_5^2$	210	1	0	14	36	546	3480	37040	330540
570		180	1	0	14	36	690	3960	57200	468720
571		141	1	0	14	36	690	5760	59000	821520
572	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-15}$	176	1	0	14	36	714	4320	59720	519120
573		154	1	0	14	36	858	4560	83840	637560
574	$\mathbb{P}^1 \times MM^3_{4-1}$	192	1	0	14	48	690	5280	59540	594720
575	$\mathbb{P}^1\times MM^3_{3-8}$	192	1	0	14	54	690	5700	61070	631260
576		162	1	0	14	60	786	7140	82760	933240
577		156	1	0	14	60	786	7320	84920	981120
578		156	1	0	14	66	834	8160	95450	1126440

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	$lpha_3$	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
579		146	1	0	14	72	882	9240	109940	1355760
580		125	1	0	14	72	1002	10800	138020	1807680
581		134	1	0	14	72	1026	10560	136220	1733760
582		160	1	0	14	78	834	8880	98870	1177260
583		155	1	0	14	78	906	9600	112190	1363320
584		146	1	0	14	84	930	10320	122720	1529640
585		130	1	0	14	84	1074	12720	163040	2202060
586		126	1	0	14	96	1170	14040	184820	2526720
587		120	1	0	14	96	1266	15240	207860	2918160
588		119	1	0	14	102	1338	17280	237830	3452400
589		113	1	0	14	102	1530	19800	284990	4270980
590		110	1	0	14	120	1506	20640	296420	4484760
591		110	1	0	14	120	1554	20520	298940	4515000
592		113	1	0	14	144	1506	21480	311900	4544400
593		103	1	0	14	144	1506	24480	349700	5456640
594		98	1	0	14	156	2226	33000	534200	9067800
595		81	1	0	14	288	2994	58440	1220900	21414960
596	V_8^4	128	1	0	16	0	1296	0	160000	0
597		124	1	0	16	24	1296	4320	163240	840000
598	$S_6^2 imes S_5^2$	180	1	0	16	42	720	4920	58390	567840
599		114	1	0	16	60	1344	11520	192940	2347800
600	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-6}$	176	1	0	16	66	936	8280	97630	1086540
601	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-12}$	160	1	0	16	72	1056	9840	122920	1428000
602		146	1	0	16	78	1080	11040	138490	1725780
603	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-13}$	160	1	0	16	84	1104	11400	137860	1685040
604		136	1	0	16	84	1152	12600	162700	2132760
605		140	1	0	16	90	1176	12900	164590	2139060
606		132	1	0	16	90	1200	13440	175750	2332680
607	$\mathbb{P}^1\times MM_{2-11}^3$	144	1	0	16	108	1248	15600	188260	2538480
608		120	1	0	16	108	1488	18600	261700	3797640
609		115	1	0	16	114	1488	19440	268990	3973620

Period ID	Description	$(-K_X)^4$	$lpha_0$	α_1	α_2	$lpha_3$	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
610		116	1	0	16	114	1488	19740	275470	4077780
611		99	1	0	16	114	1512	23640	303190	5285700
612		120	1	0	16	120	1488	19440	268360	3894240
613		110	1	0	16	126	1752	23940	355570	5509980
614		120	1	0	18	48	1494	9120	206820	1864800
615		134	1	0	18	102	1398	16200	212670	2919420
616		125	1	0	18	114	1542	19200	262890	3780420
617		112	1	0	18	120	1878	23400	351180	5323080
618		104	1	0	18	120	1878	25200	379980	6032880
619		110	1	0	18	132	1926	25800	388800	6041280
620		104	1	0	18	138	2166	30240	478170	7777560
621		100	1	0	18	156	2190	32760	513720	8536080
622		99	1	0	18	156	2310	33240	537120	8919960
623		90	1	0	18	192	2862	46440	802980	14515200
624		84	1	0	18	228	2934	55320	969840	18061680
625	$S_5^2 \times S_5^2$	150	1	0	20	60	1140	9120	121700	1377600
626	$S_4^2 imes \mathbb{P}^2$	216	1	0	20	102	1188	11760	123050	1391880
627		132	1	0	20	120	1668	21120	303320	4519200
628		120	1	0	20	120	1860	23280	342200	5115600
629		116	1	0	20	126	1908	24480	361010	5470920
630		102	1	0	20	156	2340	34080	540740	8942640
631		100	1	0	20	168	2580	38400	629120	10709160
632		72	1	0	20	312	7332	147120	3144440	73936800
633	$S_4^2 \times F_1$	192	1	0	22	102	1434	13740	160510	1881180
634		128	1	0	22	120	1914	23280	347980	5206320
635	$\mathbb{P}^1\times MM^3_{3-3}$	144	1	0	22	132	2058	24360	345280	4867800
636		112	1	0	22	144	2394	34200	557140	9241680
637		114	1	0	22	162	2490	34260	531490	8504160
638		95	1	0	22	186	3090	47880	824530	14728980
639		83	1	0	22	246	4290	74280	1433830	28650720

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	α_4	$lpha_5$	$lpha_6$	α_7
640	V_6^4	96	1	0	24	0	3240	0	672000	0
641		93	1	0	24	36	3240	10800	680100	3528000
642		92	1	0	24	72	3288	21600	720600	7101360
643	$S_4^2 \times \mathbb{P}^1 \times \mathbb{P}^1$	192	1	0	24	96	1704	14400	193920	2150400
644	$S_4^2 \times S_7^2$	168	1	0	24	102	1704	15720	205530	2452380
645		83	1	0	24	144	3480	46920	909600	16450560
646	$\mathbb{P}^1 \times \mathrm{MM}_{2-9}^3$	128	1	0	24	174	2784	37680	578490	9059820
647		104	1	0	24	192	3048	45840	757680	13077120
648		100	1	0	24	192	3192	48120	816000	14306040
649		94	1	0	24	234	3648	60780	1060350	19603500
650		84	1	0	24	264	4632	83040	1611960	32664240
651		90	1	0	26	72	3534	22320	787580	7514640
652	$S_4^2 \times S_6^2$	144	1	0	26	108	1998	19080	270440	3435600
653		82	1	0	26	216	4302	72480	1371500	27676320
654		89	1	0	26	246	4302	72120	1339550	25814460
655		74	1	0	26	288	5166	102960	2038580	44530080
656		68	1	0	26	396	6222	151080	3168440	74446680
657		108	1	0	28	240	3996	62400	1067680	19007520
658		86	1	0	28	258	4764	82200	1573390	31316460
659		80	1	0	28	288	5484	100800	2038960	42887040
660		80	1	0	28	306	5580	104100	2099350	44273880
661		68	1	0	28	432	9660	210240	5004640	126134400
662	$S_4^2 \times S_5^2$	120	1	0	30	126	2658	27720	439590	6247500
663	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-10}$	128	1	0	30	216	3858	54000	891660	14726880
664		104	1	0	30	240	4338	66960	1182900	21408240
665		70	1	0	30	300	6690	124920	2778600	61790400
666		70	1	0	30	372	7314	153720	3385200	79195200
667		84	1	0	32	318	6144	113280	2304770	48799800
668		74	1	0	32	384	7728	157800	3492320	80806320
669		88	1	0	36	336	6708	119520	2419200	50507520
670		84	1	0	36	360	7188	134400	2795400	60459840

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	α_3	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
671		64	1	0	36	552	12852	304080	7828200	210966000
672	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-7}$	112	1	0	38	348	6954	117840	2268560	44336040
673		80	1	0	38	384	8106	156480	3390500	76130880
674		88	1	0	38	396	8010	150600	3136160	67735080
675	$S_4^2 \times S_4^2$	96	1	0	40	192	4776	59520	1120000	19138560
676		74	1	0	44	516	11580	248880	5903540	145945800
677		60	1	0	44	636	15804	393480	10666340	301939680
678		60	1	0	44	696	17388	445680	12371480	359059680
679		54	1	0	44	888	23052	649200	19904120	635293680
680	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-6}$	96	1	0	46	528	11826	238560	5341780	122340960
681		55	1	0	46	714	18618	496560	14203810	428469300
682	V_4^4	64	1	0	48	0	15120	0	7392000	0
683		61	1	0	48	216	15408	151320	7959000	117482400
684		68	1	0	48	660	15552	367320	9396300	251895000
685		52	1	0	50	792	21078	635760	18069260	600739440
686		65	1	0	52	696	17412	424440	11365000	317604000
687	$S_3^2 \times \mathbb{P}^2$	162	1	0	54	498	9882	162000	2938770	54057780
688		99	1	0	54	528	11178	207720	4427820	98491680
689		64	1	0	54	744	19194	481680	13279500	381906000
690		56	1	0	54	888	24378	677520	20447820	644873040
691		54	1	0	54	1032	37242	1222560	41404860	1477269360
692	$S_3^2 \times F_1$	144	1	0	56	498	10536	171900	3240110	60897480
693		96	1	0	56	528	11832	217920	4748600	106293600
694		80	1	0	56	600	14424	317100	7961600	207233040
695	$S_3^2 \times \mathbb{P}^1 \times \mathbb{P}^1$	144	1	0	58	492	11214	178440	3502120	65938320
696	$S_3^2 \times S_7^2$	126	1	0	58	498	11214	181800	3561250	68151720
697	$S_3^2 \times S_6^2$	108	1	0	60	504	11916	195120	3962040	78104880
698		54	1	0	60	1068	30156	893280	28423860	948659040
699		50	1	0	60	1212	35916	1134480	38512860	1368087000
700	$S_3^2 \times S_5^2$	90	1	0	64	522	13392	225720	4887190	102194400
701		81	1	0	66	852	21510	504000	13009080	347891040

Period ID	Description	$(-K_X)^4$	$lpha_0$	α_1	α_2	$lpha_3$	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
702		51	1	0	66	1356	47574	1614240	58420920	2223985680
703	$\mathbb{P}^1 \times MM^3_{2-5}$	96	1	0	68	816	21012	465960	11662880	297392760
704		78	1	0	68	852	22308	520680	13640900	368091360
705		46	1	0	68	1320	43236	1421040	51100520	1914785040
706	$S_3^2 \times S_4^2$	72	1	0	74	588	17550	319560	7862600	185440080
707		66	1	0	78	1140	32706	877320	26208960	814453920
708		63	1	0	78	1176	34002	937080	28577940	909170640
709		48	1	0	78	1680	60066	2142720	82424580	3324124440
710		60	1	0	80	1212	36240	1020360	31974020	1043489160
711		41	1	0	84	2148	77316	3051480	128188740	5649930720
712		45	1	0	90	2040	76014	2873160	117404820	5023514160
713	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-4}$	80	1	0	92	1518	47172	1357680	42774050	1385508600
714		62	1	0	92	1626	51492	1574580	52448150	1816414320
715		40	1	0	92	2112	83820	3281280	141863600	6368328960
716		53	1	0	102	1950	67002	2266320	83881470	3245543280
717		40	1	0	102	2688	106410	4495680	203447460	9658434240
718		38	1	0	102	3408	146250	6695280	334814340	17506424880
719		42	1	0	104	2472	97944	3940320	171825080	7840793520
720	$S_3^2 imes S_3^2$	54	1	0	108	984	37260	848880	26609400	804368880
721		44	1	0	128	2976	120960	4959840	221633120	10369947840
722		35	1	0	138	4650	222918	11448480	632940330	36647730000
723	$\mathbb{P}^1 \times V_8^3$	64	1	0	154	3840	159486	6504960	284808340	12889551360
724		40	1	0	168	4752	219624	10383840	531501360	28511659680
725		36	1	0	184	5688	286008	14876160	837897160	49505030400
726		26	1	0	272	13560	952176	73148160	5996559080	516454715280
727	$\mathbb{P}^1 \times V_6^3$	48	1	0	398	17616	1221810	85572960	6386359700	493612489440
728		30	1	0	420	19992	1488708	114603120	9497959800	824518956240
729		27	1	0	444	22404	1771596	146305440	13047797460	1221757064640
730		26	1	0	468	24852	2065764	180367920	17014559940	1685867765400
731		16	1	0	1040	105984	15564048	2472668160	422070022400	75673543680000
732	$\mathbb{P}^1 \times V_4^3$	32	1	0	1946	215808	35318526	5981882880	1074550170260	200205416839680

Period ID	Description	$(-K_X)^4$	α_0	α_1	α_2	$lpha_3$	$lpha_4$	$lpha_5$	$lpha_6$	$lpha_7$
733		20	1	0	1992	227472	38459880	6796332000	1282447706160	252711084477600
734		17	1	0	2136	262896	48275736	9412519800	1975803279600	435882277192320
735		12	1	0	2664	466368	115475112	31137505920	9021039724800	2746619333498880
736		9	1	0	6804	2040912	852143652	389608626240	191430924575040	98894833331535360
737		8	1	0	12816	5435904	3188239632	2051802731520	1419118168838400	1032164932439531520
738		5	1	0	99000	130800000	233995275000	462392774925120	982577026659240000	2197113382189414080000

It appears from Table 2 as if the regularized quantum period might coincide for the three pairs with period IDs 81 and 82, 117 and 118, and 248 and 249. This is not the case. The coefficients α_8 , α_9 , and α_{10} in these cases are:

Period ID	α_8	α_9	α_{10}
81	10990	102480	365652
82	14350	87360	441252
117	32830	212520	1190952
118	32830	227640	1190952
248	120820	814800	5670504
249	127540	814800	6048504

Table 3: Certain 4-dimensional Fano manifolds with Fano index r=1 that arise as complete intersections in toric Fano manifolds.

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
738		5	825	6	21	1 1 1 1 1 5
737		8	552	7	27	$1 1 1 1 1 1 1 \ 2 4$
736		9	369	7	28	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
735		12	324	8	34	1 1 1 1 1 1 1 1 2 2 3
731		16	224	9	41	1 1 1 1 1 1 1 1 1 2 2 2 2
734		17	293	10	45	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
733		20	212	11	51	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
730		26	186	12	60	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
726		26	251	12	60	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
729		27	99	12	61	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
728		30	114	13	67	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
732	$\mathbb{P}^1 \times V_4^3$	32	-112	15	75	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
722		35	155	14	75	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
725		36	92	14	76	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
718		38	191	15	81	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
724		40	72	15	83	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
717		40	144	15	83	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
715		40	152	15	83	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
711		41	109	15	84	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
719		42	27	15	85	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
721		44	116	16	90	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
712		45	63	16	91	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
705		46	93	16	92	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
727	$\mathbb{P}^1 \times V_6^3$	48	-72	18	100	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
709		48	99	17	97	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
699		50	86	17	99	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
702		51	135	18	103	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
685		52	168	18	104	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
716		53	80	18	105	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
720	$S_3^2 \times S_3^2$	54	81	16	100	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
679		54	94	18	106	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
698		54	105	18	106	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
691		54	171	19	109	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
681		55	85	18	107	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
690		56	40	18	108	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
710		60	12	19	115	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
678		60	48	19	115	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
677		60	68	19	115	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
683		61	149	20	119	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
714		62	44	20	120	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
708		63	48	20	121	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
723	$\mathbb{P}^1\times V_8^3$	64	-48	21	125	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
671		64	56	20	122	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
689		64	72	20	122	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
686		65	37	20	123	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
707		66	84	21	127	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
684		68	62	21	129	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
661		68	64	21	129	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
656		68	93	21	129	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
666		70	52	21	131	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
665		70	60	21	131	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
706	$S_3^2 \times S_4^2$	72	72	20	130	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
632		72	72	22	136	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
676		74	42	22	138	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
668		74	64	22	138	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
655		74	68	22	138	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
704		78	0	23	145	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
713	$\mathbb{P}^1 \times MM^3_{2-4}$	80	-28	24	150	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
673		80	24	23	147	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
694		80	35	24	150	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
660		80	40	23	147	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
659		80	40	23	147	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
701		81	36	24	151	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
595		81	101	24	151	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
653		82	84	24	152	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
639		83	72	24	153	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
645		83	77	24	153	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
670		84	32	24	154	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
624		84	52	24	154	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
650		84	54	24	154	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
667		84	58	24	154	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
658		86	21	24	156	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
674		88	32	25	161	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
669		88	40	25	161	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
654		89	40	25	162	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
651		90	12	25	163	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
623		90	45	25	163	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
700	$S_3^2 \times S_5^2$	90	63	24	160	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
642		92	78	26	168	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
641		93	51	26	169	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
649		94	32	26	170	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
638		95	29	26	171	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
680	$\mathbb{P}^1 \times MM^3_{2-6}$	96	-24	27	175	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
703	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-\xi}$	96	-12	27	175	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
693		96	-9	27	175	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
675	$S_4^2 \times S_4^2$	96	64	25	169	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
545		98	52	27	177	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
594		98	55	27	177	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
179		98	125	28	180	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
688		99	27	28	181	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
622		99	40	27	178	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
611		99	51	27	178	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
648		100	26	27	179	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
631		100	34	27	179	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
621		100	36	27	179	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
630		102	21	27	181	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
593		103	63	28	185	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
664		104	12	28	186	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
620		104	37	28	186	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
647		104	40	28	186	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
618		104	40	28	186	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
657		108	20	29	193	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
697	$S_3^2 \times S_6^2$	108	54	28	190	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
619		110	26	29	195	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
613		110	26	29	195	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
591		110	34	29	195	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
590		110	34	29	195	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
672	$\mathbb{P}^1 \times MM^3_{2-7}$	112	-8	30	200	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
636		112	24	30	200	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
439		112	52	30	200	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
617		112	56	30	200	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
566		112	68	30	200	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
592		113	40	30	201	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
589		113	45	30	201	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
637		114	31	30	202	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
599		114	42	30	202	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
609		115	27	30	203	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
629		116	20	30	204	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
610		116	22	30	204	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
178		116	68	31	207	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
588		119	34	31	210	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
612		120	24	31	211	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
614		120	24	31	211	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
587		120	26	31	211	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
608		120	36	31	211	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
628		120	40	31	211	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
662	$S_4^2 imes S_5^2$	120	56	30	208	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
537		122	53	32	216	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
565		124	27	32	218	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
597		124	36	32	218	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
616		125	28	32	219	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
580		125	29	32	219	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
542		125	34	32	219	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
586		126	27	32	220	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-\overline{K_X})^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
696	$S_3^2 \times S_7^2$	126	45	32	220	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
646	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-\S}$	128	-8	33	225	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
663	$\mathbb{P}^1 \times MM_{2-10}^3$	128	0	33	225	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
634		128	4	33	225	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
544		128	40	33	225	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
498		129	41	33	226	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
585		130	23	33	227	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
540		130	26	33	227	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
497		130	26	33	227	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
541		130	34	33	227	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
177		130	68	34	230	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
564		131	22	33	228	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
627		132	12	34	232	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
606		132	22	33	229	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
536		133	35	34	233	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
581		134	34	34	234	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
615		134	36	34	234	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
561		134	38	34	234	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
563		136	20	34	236	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
539		136	22	34	236	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
604		136	24	34	236	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
543		140	24	35	243	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
434		140	26	35	243	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
605		140	26	35	243	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
535		140	36	35	243	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
571		141	-3	35	244	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
492		141	33	35	244	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
538		142	20	35	245	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
607	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-11}$	144	-8	36	250	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
635	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-3}$	144	4	36	250	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
323		144	23	36	250	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
560		144	24	36	250	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
534		144	34	36	250	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
692	$S_3^2 \times F_1$	144	36	36	250	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
551		144	36	36	250	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
695	$S_3^2 imes \mathbb{P}^1 imes \mathbb{P}^1$	144	36	36	250	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
652	$S_4^2 \times S_6^2$	144	48	35	247	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
438		145	33	36	251	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
602		146	16	36	252	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
533		146	20	36	252	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
531		146	22	36	252	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
584		146	23	36	252	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
579		146	24	36	252	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
530		146	24	36	252	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
562		146	25	36	252	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
496		148	22	36	254	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
433		149	34	37	258	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
532		150	32	37	259	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
625	$S_5^2 imes S_5^2$	150	49	36	256	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
494		151	22	37	260	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
495		151	25	37	260	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
436		151	25	37	260	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
558		152	22	37	261	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
573		154	30	38	266	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
583		155	24	38	267	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
528		156	20	38	268	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
491		156	20	38	268	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
577		156	24	38	268	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
559		156	24	38	268	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
578		156	28	38	268	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
519		158	25	39	273	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
601	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-1}$	160	0	39	275	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
603	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-13}$	160	4	39	275	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
437		160	24	39	275	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
582		160	24	39	275	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
488		160	30	39	275	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
322		160	30	39	275	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
432		160	32	39	275	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
176		160	72	40	278	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
487		161	22	39	276	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
493		161	24	39	276	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
41		161	69	40	279	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
576		162	19	39	277	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
435		162	19	39	277	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
486		162	21	39	277	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
527		162	22	39	277	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
687	$S_3^2 \times \mathbb{P}^2$	162	27	40	280	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
174		163	31	40	281	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
426		166	20	40	284	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
425		166	22	40	284	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
529		167	22	40	285	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
490		167	24	40	285	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
555		168	24	40	286	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
644	$S_4^2 \times S_7^2$	168	40	40	286	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
71		170	116	43	297	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
554		172	20	41	293	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
518		172	20	41	293	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
428		172	20	41	293	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
526		172	22	41	293	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
522		172	22	41	293	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
524		172	24	41	293	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
431		172	58	42	296	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
420		173	23	41	294	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
572	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-1}$	176	-4	42	300	1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
557	$\mathbb{P}^1 \times MM_{2-16}^3$	176	4	42	300	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
552		176	9	42	300	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
600	$\mathbb{P}^1 \times MM^3_{3-6}$	176	12	42	300	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
430		176	16	42	300	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
318		176	16	42	300	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
556		176	20	42	300	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
485		176	20	42	300	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
424		176	20	42	300	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
386		176	22	42	300	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
511		176	24	42	300	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
320		176	33	42	300	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
423		177	21	42	301	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
321		177	21	42	301	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
409		178	20	42	302	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
429		178	22	42	302	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
40		179	41	43	306	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
172		180	32	43	307	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
507		180	36	43	307	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
570		180	40	43	307	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
598	$S_6^2 \times S_5^2$	180	42	42	304	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
525		182	20	43	309	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
523		182	22	43	309	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
477		182	22	43	309	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
484		182	22	43	309	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
483		182	24	43	309	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
482		184	24	43	311	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
173		184	40	44	314	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
521		185	17	44	315	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
410		186	20	44	316	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
450		186	33	44	316	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
427		187	24	44	317	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
506		188	8	44	318	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
414		188	19	44	318	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
517		188	19	44	318	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
481		188	20	44	318	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
480		188	21	44	318	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
416		188	22	44	318	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
520		188	24	44	318	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
489	$\mathbb{P}^1 \times \mathrm{MM}^3_{218}$	192	4	45	325	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
553	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-7}$	192	12	45	325	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
550		192	12	45	325	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
575	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-8}$	192	16	45	325	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
574	$\mathbb{P}^1 \times MM^3_{4-1}$	192	16	45	325	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
470		192	18	45	325	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
175		192	18	45	325	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
462		192	20	45	325	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
475		192	22	45	325	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
314		192	30	45	325	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
633	$S_4^2 \times F_1$	192	32	45	325	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
643	$S_4^2 imes \mathbb{P}^1 imes \mathbb{P}^1$	192	32	45	325	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
319		193	19	45	326	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
272		194	19	45	327	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
415		194	19	45	327	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
298		195	18	45	328	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
168		196	16	46	332	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
478		197	24	46	333	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
419		198	18	46	334	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
516		198	24	46	334	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
421		199	15	46	335	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
308		200	24	46	336	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
157		200	32	47	339	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
408		202	22	47	341	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
171		202	24	47	341	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
515		202	28	47	341	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
479		203	19	47	342	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
312		203	20	47	342	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
469		204	18	47	343	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
474		204	20	47	343	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
413		204	20	47	343	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
510		204	22	47	343	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
514		206	13	48	348	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
317	$\mathbb{P}^1 \times MM^3_{3-\S}$	208	4	48	350	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
509	$\mathbb{P}^1 \times MM^3_{2-19}$	208	4	48	350	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
468		208	14	48	350	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
549	$\mathbb{P}^1 \times MM_{3-10}^3$	208	16	48	350	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
313		208	16	48	350	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
315		208	16	48	350	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
307		208	18	48	350	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
316		208	20	48	350	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
405		208	20	48	350	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
449		208	20	48	350	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
418		208	22	48	350	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
513		208	24	48	350	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
412		209	19	48	351	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
407		209	20	48	351	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
476		209	23	48	351	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
362		210	20	48	352	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
569	$S_7^2 imes S_5^2$	210	35	48	352	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
364		210	36	49	355	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
39		211	29	49	356	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
143		212	16	48	354	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
385		212	22	49	357	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
167		213	19	49	358	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
467		214	19	49	359	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
411		214	20	49	359	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
406		214	20	49	359	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
422		214	24	49	359	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
306		215	21	49	360	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
145		216	16	50	364	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
626	$S_4^2 \times \mathbb{P}^2$	216	24	50	364	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
546	$S_6^2 \times S_6^2$	216	36	49	361	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
404		218	14	50	366	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
156		218	20	50	366	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
503		218	20	50	366	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
295		219	19	50	367	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
465		219	20	50	367	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
395		220	16	50	368	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
303		220	18	50	368	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
466		220	22	50	368	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
472	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-1}$	224	12	51	375	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
459		224	13	51	375	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
547	$\mathbb{P}^1 \times \mathrm{MM}^3_{4-3}$	224	16	51	375	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
508	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-12}$	224	16	51	375	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
401		224	16	51	375	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
363		224	19	51	375	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
310		224	19	51	375	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
170		224	20	51	375	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
473		224	22	51	375	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
296		225	16	51	376	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
361		225	19	51	376	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
383		226	18	51	377	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
379		226	20	51	377	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
398		226	23	51	377	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
359		228	20	51	379	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
165		229	19	52	383	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
297		229	21	52	383	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
28		230	13	51	381	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
403		230	18	52	384	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
399		230	18	52	384	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
302		230	18	52	384	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
384		230	18	52	384	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
271		230	19	52	384	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
166		230	20	52	384	1 1 1 1 0 1 1 0 1 2 2 0 0 0 0 0 0 0 1 1 0 1 0 1 0 1 0 1 0 0 0 0
471		230	22	52	384	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
464		230	22	52	384	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
499	$\mathrm{B}\mathrm{\o}\mathrm{S}^4_{40}$	230	30	51	381	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
294		235	19	53	392	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
305		235	19	53	392	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
311		235	20	53	392	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
382		236	22	53	393	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
394		238	22	54	398	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
381		239	13	54	399	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
169		240	-12	54	400	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
502	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-2}$	240	8	54	400	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
402	$\mathbb{P}^1\times MM_{2-24}^3$	240	12	54	400	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
293		240	16	54	400	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
300		240	16	54	400	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
458		240	16	54	400	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
463	$\mathbb{P}^1 \times MM_{3-13}^3$	240	16	54	400	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
380		240	19	54	400	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
505	$\mathbb{P}^1 \times MM^3_{4-4}$	240	20	54	400	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
548	$F_1 \times S_5^2$	240	28	54	400	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
568	$\mathbb{P}^1 \times \mathbb{P}^1 \times S_5^2$	240	28	54	400	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
70		240	32	55	403	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
267		241	17	54	401	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
304		241	18	54	401	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
358		242	14	54	402	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
38		242	30	55	405	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
36		244	16	55	407	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
417		244	24	55	407	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
393		245	19	55	408	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
392		246	18	55	409	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
378		246	18	55	409	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
457		246	21	55	409	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
223		248	16	55	411	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
144		249	17	56	415	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
31	BOS_{31}^4	249	24	55	412	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
336		250	19	56	416	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
400		250	22	56	416	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
397		251	21	56	417	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
262		252	16	56	418	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
460		252	20	56	418	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
270		252	22	56	418	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
504	$S_6^2 \times S_7^2$	252	30	56	418	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
108		254	18	57	423	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
279		255	19	57	424	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
388	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-25}$	256	8	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
224		256	12	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
357		256	14	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
269		256	14	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
163		256	15	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
301		256	16	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
456	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-15}$	256	16	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
448		256	16	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
155		256	17	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
291		256	18	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
292		256	18	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
360		256	18	57	425	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
268		256	18	57	425	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
162		256	18	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
461	$\mathbb{P}^1 \times \mathrm{MM}^3_{45}$	256	20	57	425	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
455		256	22	57	425	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
264		257	16	57	426	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
290		257	17	57	426	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
289		257	17	57	426	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
285		257	19	57	426	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
343		258	10	57	427	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
353		258	18	57	427	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
375		258	21	57	427	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
377		260	16	58	432	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
164		260	16	58	432	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
35		261	17	58	433	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
376		261	20	58	433	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
288		262	18	58	434	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
266		262	19	58	434	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
142		266	16	59	441	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
261		266	19	59	441	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
309		266	20	59	441	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
369		267	17	59	442	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
387		268	16	59	443	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
342		268	22	60	446	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
396	BOS_{64}^4	268	24	59	443	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
107		270	9	60	448	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
512	$\mathbb{P}^2 \times S_5^2$	270	21	60	448	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
284		271	19	60	449	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
259		272	13	60	450	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
352		272	14	60	450	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
106		272	15	60	450	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
160		272	15	60	450	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
233		272	16	60	450	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
373	$\mathbb{P}^1 \times MM_{3-16}^3$	272	16	60	450	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
356		272	17	60	450	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
454	$\mathbb{P}^1 \times MM^3_{4-7}$	272	20	60	450	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
374		272	21	60	450	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
136		273	15	60	451	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
188		274	14	60	452	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
220		274	16	60	452	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
260		277	17	61	458	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
265		277	17	61	458	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
287		277	18	61	458	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
372		278	20	61	459	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
355		278	21	61	459	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
391	BOS_{63}^4	278	24	61	459	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
221		281	19	62	465	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
32		281	20	62	465	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
138		282	14	62	466	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
161		282	16	62	466	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
141		282	18	62	466	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
349		282	18	62	466	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
444		282	20	62	466	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
452		282	22	62	466	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
154		283	18	62	467	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
286		283	21	62	467	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
133		284	16	62	468	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
354		286	16	63	473	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
198		286	19	63	473	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
139		288	8	63	475	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
335		288	13	63	475	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
247		288	15	63	475	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
222		288	15	63	475	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
299		288	16	63	475	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
368	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-1}$	288	16	63	475	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
351	$\mathbb{P}^1 \times MM_{3-17}^3$	288	16	63	475	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
348		288	16	63	475	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
282		288	17	63	475	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
371		288	20	63	475	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
447	$\mathbb{P}^1 \times \mathrm{MM}^3_{48}$	288	20	63	475	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
453	$\mathbb{P}^1 \times \mathrm{MM}^3_{52}$	288	24	63	475	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
451	$S_6^2 \times F_1$	288	24	63	475	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
501	$S_6^2 imes \mathbb{P}^1 imes \mathbb{P}^1$	288	24	63	475	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
245		289	16	63	476	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
257		289	17	63	476	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
132		289	18	63	476	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
253		289	18	63	476	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
249		290	18	63	477	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
34		292	14	64	482	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
258		293	16	64	483	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
347		293	18	64	483	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
367		293	21	64	483	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
350		294	16	64	484	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
263		294	18	64	484	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
446	$S_7^2 imes S_7^2$	294	25	64	484	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
69		295	17	65	488	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
140		296	16	65	489	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
30		297	13	65	490	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
390	$\mathrm{B}\mathrm{\o}\mathrm{S}^4_{55}$	298	24	65	491	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
370	BOS_{57}^4	298	24	65	491	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
131		299	15	65	492	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
278		299	17	65	492	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
137		299	17	65	492	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
283	$\mathrm{B}\mathrm{\varnothing}\mathrm{S}^4_{84}$	299	20	65	492	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
254		302	19	66	498	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
232		302	19	66	498	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
150		302	20	66	498	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
104		303	13	66	499	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
218		303	17	66	499	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
277	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-27}$	304	12	66	500	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
159		304	12	66	500	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
134		304	13	66	500	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
248		304	14	66	500	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
152		304	14	66	500	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
182		304	16	66	500	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
252		304	16	66	500	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
443	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-2}$	304	16	66	500	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
346	$\mathbb{P}^1 \times MM^3_{3-20}$	304	16	66	500	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
219		304	16	66	500	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
256	$\mathbb{P}^1 \times MM_{3-19}^3$	304	16	66	500	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
255		304	17	66	500	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
153		304	17	66	500	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
334		304	18	66	500	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
445	$\mathbb{P}^1 \times \mathrm{MM}^3_{49}$	304	20	66	500	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
123		305	13	66	501	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
333	BOS_{33}^4	305	21	66	501	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
331		306	18	66	502	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
441	BOS_{39}^4	307	23	66	503	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
105		308	18	67	507	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
389	$BØS_{49}^4$	308	24	67	507	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
135		309	18	67	508	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
246		309	19	67	508	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
130		310	17	67	509	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
281	$BØS^4_{69}$	310	20	67	509	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
217	BOS_{29}^4	310	21	67	509	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
244		314	16	68	516	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
215		319	13	69	524	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
158		320	0	69	525	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
149	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-2}$	320	8	69	525	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
341	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-29}$	320	12	69	525	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
216	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-2}$	320	16	69	525	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
115		320	16	69	525	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
187		320	16	69	525	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
332		320	16	69	525	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
243		320	17	69	525	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
345	$\mathbb{P}^1 \times MM^3_{4-10}$	320	20	69	525	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
238		321	17	69	526	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
242		321	17	69	526	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
241	$BØS_{28}^4$	321	21	69	526	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
25	$BØS^4_{32}$	322	18	69	527	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
102		324	12	70	532	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
365	$S_6^2 imes \mathbb{P}^2$	324	18	70	532	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
251	$\mathrm{B}\mathrm{\o}\mathrm{S}^4_{80}$	325	20	70	533	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
214		326	16	70	534	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
129	$BØS_{42}^4$	326	17	70	534	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
27	$BØS^4_{30}$	327	18	70	535	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
210		329	17	71	540	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
29		330	14	71	541	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
280	$BØS_{53}^4$	330	20	71	541	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
366		330	20	71	541	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
275		331	16	71	542	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
209		331	17	71	542	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
250	$\mathrm{B}\mathrm{ ilde{O}}\mathrm{S}^4_{65}$	331	20	71	542	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
237	$\mathrm{B}\mathrm{\o}\mathrm{S}^4_{66}$	332	21	71	543	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
344	BOS_{96}^4	334	18	72	548	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
231		335	13	72	549	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
122		335	15	72	549	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
239		335	16	72	549	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
19		335	18	72	549	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
103		336	12	72	550	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
230		336	12	72	550	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
101		336	13	72	550	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
99		336	14	72	550	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
126		336	14	72	550	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
330	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-2}$	336	16	72	550	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
240	$\mathbb{P}^1 \times MM^3_{3-23}$	336	16	72	550	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
340	$S_7^2 \times F_1$	336	20	72	550	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
442	$S_7^2\times \mathbb{P}^1\times \mathbb{P}^1$	336	20	72	550	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
90	BOS_{16}^4	337	16	72	551	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
22		338	13	72	552	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
59		341	17	74	561	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
276	BOS_{59}^4	341	20	73	558	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
6		341	29	74	561	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
68		345	17	74	565	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
128		346	12	74	566	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
121	BOS_{93}^4	347	16	74	567	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
67		350	12	75	573	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
18		351	9	75	574	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
206	BOS_{44}^4	351	15	75	574	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
114		352	12	75	575	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
125		352	12	75	575	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
119		352	13	75	575	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
207		352	13	75	575	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
66		352	14	75	575	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
151	BOS^4_{73}	352	16	75	575	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
127	BOS_{85}^4	352	16	75	575	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
236	$\mathbb{P}^1 \times MM^3_{3-2}$	352	16	75	575	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
208		352	16	75	575	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
339	$\mathbb{P}^1 \times \mathrm{MM}^3_{4-1}$	352	20	75	575	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
95		353	14	75	576	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
203		353	14	75	576	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
17		353	15	75	576	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
338	BOS_{23}^4	354	18	76	580	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
100	$\mathrm{B}\mathrm{\varnothing}\mathrm{S}^4_{81}$	357	16	76	583	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
98		357	17	76	583	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
229		362	16	77	591	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
148		362	17	77	591	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
274	$BØS^4_{68}$	363	20	77	592	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
24	BOS_{87}^4	364	17	77	593	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
337	BOS_4^4	364	18	78	596	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
205	$\mathrm{B}\mathrm{\acute{O}S}^4_{102}$	367	15	78	599	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
124		368	12	78	600	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
228	$\mathbb{P}^1 \times MM_{2-3}^3$	368	12	78	600	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
120	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-30}$	368	12	78	600	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
113		368	13	78	600	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
204	$\mathbb{P}^1 \times MM^3_{3-26}$	368	16	78	600	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
213		368	16	78	600	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
212		368	16	78	600	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
97	BOS_{13}^4	368	17	78	600	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
329	$\mathbb{P}^1 \times MM^3_{4-13}$	368	20	78	600	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
88		369	13	78	601	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
201	BOS_{34}^4	369	17	78	601	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
118	BOS_{35}^4	369	17	78	601	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
62		370	14	78	602	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
235	$\mathrm{B}\mathrm{\o}\mathrm{S}^4_{58}$	373	20	79	608	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
58		376	12	80	614	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
5		376	14	80	614	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
26		378	10	80	616	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
89		378	12	80	616	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
227	$S_7^2 imes \mathbb{P}^2$	378	15	80	616	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
193	BOS_9^4	382	15	81	623	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
65		383	13	81	624	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
147		384	13	81	625	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
93		384	13	81	625	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
16		384	13	81	625	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
185	BOS_{36}^4	384	16	81	625	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
226	$F_1 \times F_1$	384	16	81	625	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
96	BOS_{91}^4	384	16	81	625	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
86	BOS_{92}^4	384	16	81	625	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
328	$\mathbb{P}^1 \times \mathbb{P}^1 \times F_1$	384	16	81	625	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
324	BOS_{38}^4	385	17	81	626	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
117	BOS_{88}^4	389	16	82	633	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
94	$BØS^4_{71}$	390	16	82	634	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
273	BOS_{50}^4	394	20	83	641	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
75	BOS_{20}^4	400	12	84	650	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
85	BOS_{113}^4	400	12	84	650	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
64		400	12	84	650	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
197		400	12	84	650	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
184	$\mathbb{P}^1 \times \mathrm{MM}^3_{3-2}$	400	16	84	650	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
200	$\mathbb{P}^1 \times MM^3_{3-30}$	400	16	84	650	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
21	$B \varnothing S^4_{114}$	401	13	84	651	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
15	BOS_{86}^4	405	12	85	658	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
234	BOS_{54}^4	405	20	85	658	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
202	BOS_{56}^4	405	20	85	658	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
23	BOS_{46}^4	406	13	85	659	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
196	BOS_{25}^4	409	15	86	665	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
87	$BØS_{70}^4$	411	16	86	667	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
199	$B \varnothing S^4_{100}$	415	15	87	674	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
57	BOS_{11}^4	415	16	87	674	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
92		416	12	87	675	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
225	$\mathbb{P}^1 \times MM_{3-3}^3$	416	16	87	675	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
12	BOS_{37}^4	417	13	87	676	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
112	BOS_{27}^4	417	17	87	676	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
63		430	12	90	698	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
4		431	9	90	699	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
55	BOS_{104}^4	431	11	90	699	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
111	$\mathbb{P}^1 \times Q^3$	432	8	90	700	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
14		432	9	90	700	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
78		432	9	90	700	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
80	BOS_{45}^4	432	12	90	700	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
83	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-3}$	432	12	90	700	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
110	$\mathbb{P}^2 \times F_1$	432	12	90	700	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
195	$\mathbb{P}^2\times\mathbb{P}^1\times\mathbb{P}^{\frac{1}{2}}$	432	12	90	700	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
84	BOS_{82}^4	432	16	90	700	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
81	BOS_{41}^4	433	13	90	701	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
56	$B \varnothing S_{15}^4$	433	16	90	701	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
77	BOS_{24}^4	442	16	92	716	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
211	BOS_{48}^4	442	20	92	716	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
50		446	14	93	723	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
194	BOS_{95}^4	447	15	93	724	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
116	BOS_{60}^4	448	16	93	725	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
9	BOS_{17}^4	450	13	93	727	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
11	BOS_{94}^4	459	12	95	742	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
82	$BØS_6^4$	463	16	96	749	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
49		464	11	96	750	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
181	BOS_{43}^4	464	12	96	750	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
54	$B \varnothing S^4_{109}$	464	12	96	750	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
91	BOS_{52}^4	464	16	96	750	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
192	BOS_5^4	478	15	99	773	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
76	$\mathrm{B}\mathrm{\varnothing}\mathrm{S}^4_{111}$	480	12	99	775	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
109		480	12	99	775	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
146	BOS_{51}^4	480	16	99	775	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
13	$BØS_{74}^4$	486	12	100	784	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
48	$\mathrm{B}\mathrm{\varnothing}\mathrm{S}^4_{105}$	489	11	101	790	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
180	$\mathbb{P}^1 \times \mathrm{MM}^3_{2-3}$	496	12	102	800	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
79	BOS_{106}^4	496	12	102	800	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
53	$\mathrm{B}\mathrm{\varnothing}\mathrm{S}^4_{10}$	496	16	102	800	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
191	$\mathrm{B}\mathrm{\o}\mathrm{S}^4_{22}$	505	15	104	815	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
2	$B \varnothing S^4_{115}$	512	8	105	825	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
10	BOS_{47}^4	513	9	105	826	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
8	$\mathrm{B} \varnothing \mathrm{S}^4_{118}$	513	9	105	826	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
52	BOS_{18}^4	529	13	108	851	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
47	$B \varnothing S^4_{121}$	544	8	111	875	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
190	BOS_3^4	558	15	114	898	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
45	$\mathrm{B}\mathrm{\varnothing}\mathrm{S}^4_{12}$	560	12	114	900	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
73	BOS_{26}^4	560	12	114	900	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
72	BOS_8^4	576	12	117	925	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
74	$BØS_7^4$	592	12	120	950	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
7	BOS_{21}^4	594	9	120	952	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles
44	BOS_1^4	605	11	123	972	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
46		624	8	126	1000	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
42	BOS_2^4	800	8	159	1275	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Table 4: Certain 4-dimensional Fano manifolds with Fano index r=2 that arise as complete intersections in toric Fano manifolds.

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^{0}(-K_{X})$	$h^0(-2K_X)$	Weights and line bundles
682	V_4^4	64	188	21	125	1 1 1 1 1 4
640	V_6^4	96	90	27	175	1 1 1 1 1 1 1 2 3
596	V_8^4	128	48	33	225	1 1 1 1 1 1 1 1 1 2 2
567	$\mathbb{P}^1 \times B_3^3$	192	-12	45	325	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
500	$\mathbb{P}^1 \times B_4^3$	256	0	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
327	$ m MW_5^4$	256	16	57	425	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
326	$ m MW_8^4$	320	10	69	525	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
189	$ m MW_7^4$	320	12	69	525	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
186	MW^4_{10}	352	10	75	575	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
325	$\mathbb{P}^1 \times \mathrm{MM}^3_{232}$	384	12	81	625	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
440	$\mathbb{P}^1 \times \mathbb{P}^1 \times \mathbb{P}^1 \times \mathbb{P}^1$	384	16	81	625	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
61	MW^4_{12}	416	10	87	675	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
183	$\mathbb{P}^1 \times \mathrm{MM}^3_{235}$	448	12	93	725	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
60	MW^4_{13}	480	8	99	775	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
51	$\mathbb{P}^1\times\mathbb{P}^3$	512	8	105	825	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
43	MW^4_{15}	640	8	129	1025	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Table 5: Certain 4-dimensional Fano manifolds with Fano index r=3 that arise as complete intersections in toric Fano manifolds.

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bundles					
37	FI_3^4	243	27	55	406	1 1 1 1 1 1 3					
33	FI_4^4	324	12	70	532	1 1 1 1 1 1 1 2 2					

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weigl	Weights and line bundles					
20	$\mathbb{P}^2\times\mathbb{P}^2$	486	9	100	784		1 0				0 1	

Table 6: The 4-dimensional Fano manifold with Fano index r=4 as a hypersurface in a toric Fano manifold.

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bund				bundles	
3	Q^4	512	6	105	825	1	1	1	1	1	1 2

Table 7: The 4-dimensional Fano manifold with Fano index r=5 is toric.

Period ID	Description	$(-K_X)^4$	$\chi(T_X)$	$h^0(-K_X)$	$h^0(-2K_X)$	Weights and line bund				bundles
1	\mathbb{P}^4	625	5	126	1001	1	1	1	1	1

Department of Mathematics, Imperial College London, 180 Queen's Gate, London SW7 2AZ, UK

 $E{-}mail\ address{:}\ \texttt{t.coates@imperial.ac.uk}$ $E{-}mail\ address{:}\ \texttt{a.m.kasprzyk@imperial.ac.uk}$ $E{-}mail\ address{:}\ \texttt{t.prince12@imperial.ac.uk}$