TABLES OF FAILED CANDIDATE SMOOTH FANO WEIGHTED COMPLETE INTERSECTIONS

MUHAMMAD IMRAN QURESHI

In this document, we list candidate Fano wieghted complete intesections that fails to be smooth, in each dimension $6 \leq n \leq 10$. This compliments the article "On the classification of smooth Fano weighted complete intersections".

1. Failed candidate Fano 6-folds

Table 1: Fano 6-folds

#	c	I	Variety
1	2	1	$X_{3,18} \subset \mathbb{P}(1^7, 6, 9)$
2	2	3	$X_{2,12} \subset \mathbb{P}(1^7, 4, 6)$
3	3	1	$X_{2,3,12} \subset \mathbb{P}(1^8, 4, 6)$
4	3	2	$X_{2^2,12} \subset \mathbb{P}(1^8, 4, 6)$
5	4	1	$X_{2^3,12} \subset \mathbb{P}(1^9, 4, 6)$

2. Failed candidate Fano 7-folds

Table 2: Fano 7-folds

#	c	I	Variety
1	2	1	$X_{2,12} \subset \mathbb{P}(1^8, 3, 4)$
2	2	2	$X_{3,18} \subset \mathbb{P}(1^8, 6, 9)$
3	2	4	$X_{2,12} \subset \mathbb{P}(1^8, 4, 6)$
4	3	1	$X_{2,3,18} \subset \mathbb{P}(1^9, 6, 9)$
5	3	2	$X_{2,3,12} \subset \mathbb{P}(1^9, 4, 6)$
6	3	3	$X_{2^2,12} \subset \mathbb{P}(1^9, 4, 6)$
7	4	1	$X_{2^2,3,12} \subset \mathbb{P}(1^{10}, 4, 6)$
8	4	2	$X_{2^3,12} \subset \mathbb{P}(1^{10}, 4, 6)$
9	5	1	$X_{2^4,12} \subset \mathbb{P}(1^{11}, 4, 6)$

3. Failed candidate Fano 8-folds

Table 3: Fano 8-folds (failed QS cases)

#	c	I	Variety
1	2	1	$X_{2,20} \subset \mathbb{P}(1^9, 4, 10)$
2	2	1	$X_{4,24} \subset \mathbb{P}(1^9, 8, 12)$
3	2	2	$X_{2,12} \subset \mathbb{P}(1^9, 3, 4)$
4	2	3	$X_{3,18} \subset \mathbb{P}(1^9, 6, 9)$
5	2	5	$X_{2,12} \subset \mathbb{P}(1^9, 4, 6)$
6	3	1	$X_{2,5,12} \subset \mathbb{P}(1^{10}, 4, 6)$
7	3	1	$X_{2,8,12} \subset \mathbb{P}(1^9, 4^2, 6)$
8	3	1	$X_{3^2,18} \subset \mathbb{P}(1^{10}, 6, 9)$
9	3	1	$X_{3,4,18} \subset \mathbb{P}(1^9, 2, 6, 9)$
10	3	1	$X_{2^2,12} \subset \mathbb{P}(1^{10}, 3, 4)$
11	3	2	$X_{2,3,18} \subset \mathbb{P}(1^{10}, 6, 9)$
12	3	3	$X_{2,3,12} \subset \mathbb{P}(1^{10}, 4, 6)$
13	3	4	$X_{2^2,12} \subset \mathbb{P}(1^{10}, 4, 6)$
14	4	1	$X_{2,3^2,12} \subset \mathbb{P}(1^{11}, 4, 6)$
15	4	1	$X_{2^2,3,18} \subset \mathbb{P}(1^{11}, 6, 9)$
16	4	1	$X_{2^2,12^2} \subset \mathbb{P}(1^9, 4^2, 6^2)$
17	4	1	$X_{2,3,5,30} \subset \mathbb{P}(1^{10}, 6, 10, 15)$
18	4	2	$X_{2^2,3,12} \subset \mathbb{P}(1^{11}, 4, 6)$
19	4	3	$X_{2^3,12} \subset \mathbb{P}(1^{11}, 4, 6)$
20	5	1	$X_{2^3,3,12} \subset \mathbb{P}(1^{12}, 4, 6)$
21	5	2	$X_{2^4,12} \subset \mathbb{P}(1^{12}, 4, 6)$
22	6	1	$X_{2^5,12} \subset \mathbb{P}(1^{13}, 4, 6)$

4. Failed candidate Fano 9-folds

Table 4: Fano 9-folds

#	c	I	Variety
1	2	1	$X_{2,15} \subset \mathbb{P}(1^{10}, 3, 5)$
2	2	2	$X_{2,20} \subset \mathbb{P}(1^{10}, 4, 10)$
3	2	2	$X_{4,24} \subset \mathbb{P}(1^{10}, 8, 12)$

#	c	I	Variety
4	2	3	$X_{2,12} \subset \mathbb{P}(1^{10}, 3, 4)$
5	2	4	$X_{3,18} \subset \mathbb{P}(1^{10}, 6, 9)$
6	2	6	$X_{2,12} \subset \mathbb{P}(1^{10}, 4, 6)$
7	3	1	$X_{2^2,20} \subset \mathbb{P}(1^{11}, 4, 10)$
8	3	1	$X_{2,10,12} \subset \mathbb{P}(1^{10}, 4, 5, 6)$
9	3	1	$X_{3,4,18} \subset \mathbb{P}(1^{11}, 6, 9)$
10	3	1	$X_{2,4,24} \subset \mathbb{P}(1^{11}, 8, 12)$
11	3	2	$X_{2,5,12} \subset \mathbb{P}(1^{11}, 4, 6)$
12	3	2	$X_{2,8,12} \subset \mathbb{P}(1^{10}, 4^2, 6)$
13	3	2	$X_{3^2,18} \subset \mathbb{P}(1^{11}, 6, 9)$
14	3	2	$X_{3,4,18} \subset \mathbb{P}(1^{10}, 2, 6, 9)$
15	3	2	$X_{2^2,12} \subset \mathbb{P}(1^{11}, 3, 4)$
16	3	3	$X_{2,3,18} \subset \mathbb{P}(1^{11}, 6, 9)$
17	3	4	$X_{2,3,12} \subset \mathbb{P}(1^{11}, 4, 6)$
18	3	5	$X_{2^2,12} \subset \mathbb{P}(1^{11}, 4, 6)$
19	4	1	$X_{2^2,5,12} \subset \mathbb{P}(1^{12}, 4, 6)$
20	4	1	$X_{2^2,8,12} \subset \mathbb{P}(1^{11}, 4^2, 6)$
21	4	1	$X_{2,3^2,18} \subset \mathbb{P}(1^{12}, 6, 9)$
22	4	1	$X_{2^3,12} \subset \mathbb{P}(1^{12}, 3, 4)$
23	4	2	$X_{2,3^2,12} \subset \mathbb{P}(1^{12}, 4, 6)$
24	4	2	$X_{2^2,3,18} \subset \mathbb{P}(1^{12}, 6, 9)$
25	4	2	$X_{2^2,12^2} \subset \mathbb{P}(1^{10}, 4^2, 6^2)$
26	4	2	$X_{2,3,5,30} \subset \mathbb{P}(1^{11}, 6, 10, 15)$
27	4	3	$X_{2^2,3,12} \subset \mathbb{P}(1^{12}, 4, 6)$
28	4	4	$X_{2^3,12} \subset \mathbb{P}(1^{12}, 4, 6)$
29	5	1	$X_{2^2,3^2,12} \subset \mathbb{P}(1^{13}, 4, 6)$
30	5	1	$X_{2^3,3,18} \subset \mathbb{P}(1^{13}, 6, 9)$
31	5	1	$X_{2^3,12^2} \subset \mathbb{P}(1^{11}, 4^2, 6^2)$
32	5	1	$X_{2^2,3,5,30} \subset \mathbb{P}(1^{12}, 6, 10, 15)$
33	5	2	$X_{2^3,3,12} \subset \mathbb{P}(1^{13}, 4, 6)$
34	5	3	$X_{2^4,12} \subset \mathbb{P}(1^{13}, 4, 6)$
35	6	1	$X_{2^4,3,12} \subset \mathbb{P}(1^{14}, 4, 6)$

#	c	I	Variety
36	6	2	$X_{2^5,12} \subset \mathbb{P}(1^{14}, 4, 6)$
37	7	1	$X_{2^6,12} \subset \mathbb{P}(1^{15}, 4, 6)$

5. Failed candidate Fano 10-folds

Table 5: Fano 10-folds

#	c	I	Variety
1	2	1	$X_{5,30} \subset \mathbb{P}(1^{11}, 10, 15)$
2	2	2	$X_{2,15} \subset \mathbb{P}(1^{11}, 3, 5)$
3	2	3	$X_{2,20} \subset \mathbb{P}(1^{11}, 4, 10)$
4	2	3	$X_{4,24} \subset \mathbb{P}(1^{11}, 8, 12)$
5	2	4	$X_{2,12} \subset \mathbb{P}(1^{11}, 3, 4)$
6	2	5	$X_{3,18} \subset \mathbb{P}(1^{11}, 6, 9)$
7	2	7	$X_{2,12} \subset \mathbb{P}(1^{11}, 4, 6)$
8	3	1	$X_{2,7,12} \subset \mathbb{P}(1^{12}, 4, 6)$
9	3	1	$X_{2,9,12} \subset \mathbb{P}(1^{11}, 3, 4, 6)$
10	3	1	$X_{3,10,12} \subset \mathbb{P}(1^{11}, 4, 5, 6)$
11	3	1	$X_{2,3,20} \subset \mathbb{P}(1^{12}, 4, 10)$
12	3	1	$X_{2,12^2} \subset \mathbb{P}(1^{11}, 4, 6^2)$
13	3	1	$X_{2,12^2} \subset \mathbb{P}(1^{10}, 3, 4^2, 6)$
14	3	1	$X_{3,5,18} \subset \mathbb{P}(1^{12}, 6, 9)$
15	3	1	$X_{3,8,18} \subset \mathbb{P}(1^{11}, 4, 6, 9)$
16	3	1	$X_{3,10,18} \subset \mathbb{P}(1^{10}, 2, 5, 6, 9)$
17	3	1	$X_{3,4,24} \subset \mathbb{P}(1^{12}, 8, 12)$
18	3	1	$X_{4^2,24} \subset \mathbb{P}(1^{11}, 2, 8, 12)$
19	3	1	$X_{4,6,24} \subset \mathbb{P}(1^{10}, 2, 3, 8, 12)$
20	3	1	$X_{2,15} \subset \mathbb{P}(1^{12}, 3, 5)$
21	3	1	$X_{2,12} \subset \mathbb{P}(1^{12}, 3, 4)$
22	3	2	$X_{2,10,12} \subset \mathbb{P}(1^{11}, 4, 5, 6)$
23	3	2	$X_{2^2,20} \subset \mathbb{P}(1^{12}, 4, 10)$
24	3	2	$X_{3,4,18} \subset \mathbb{P}(1^{12}, 6, 9)$
25	3	2	$X_{2,4,24} \subset \mathbb{P}(1^{12}, 8, 12)$

#	c	I	Variety
26	3	2	$X_{2,6,12} \subset \mathbb{P}(1^{11}, 3, 3, 4)$
27	3	3	$X_{2,5,12} \subset \mathbb{P}(1^{12}, 4, 6)$
28	3	3	$X_{2,8,12} \subset \mathbb{P}(1^{11}, 4^2, 6)$
29	3	3	$X_{3^2,18} \subset \mathbb{P}(1^{12}, 6, 9)$
30	3	3	$X_{3,4,18} \subset \mathbb{P}(1^{11}, 2, 6, 9)$
31	3	4	$X_{2,3,18} \subset \mathbb{P}(1^{12}, 6, 9)$
32	3	5	$X_{2,3,12} \subset \mathbb{P}(1^{12}, 4, 6)$
33	3	6	$X_{2^2,12} \subset \mathbb{P}(1^{12}, 4, 6)$
34	4	1	$X_{2,3,5,12} \subset \mathbb{P}(1^{13}, 4, 6)$
35	4	1	$X_{2,3,8,12} \subset \mathbb{P}(1^{12}, 4^2, 6)$
36	4	1	$X_{2^3,20} \subset \mathbb{P}(1^{13}, 4, 10)$
37	4	1	$X_{3^3,18} \subset \mathbb{P}(1^{13}, 6, 9)$
38	4	1	$X_{2,3,4,18} \subset \mathbb{P}(1^{13}, 6, 9)$
39	4	1	$X_{3^2,4,18} \subset \mathbb{P}(1^{12}, 2, 6, 9)$
40	4	1	$X_{3,4^2,18} \subset \mathbb{P}(1^{11}, 2^2, 6, 9)$
41	4	1	$X_{2^2,4,24} \subset \mathbb{P}(1^{13}, 8, 12)$
42	4	1	$X_{2,3,12,18} \subset \mathbb{P}(1^{11}, 4, 6^2, 9)$
43	4	1	$X_{3,4,5,30} \subset \mathbb{P}(1^{12}, 6, 10, 15)$
44	4	1	$X_{2^2,10,12} \subset \mathbb{P}(1^{12}, 4, 5, 6)$
45	4	2	$X_{2^2,5,12} \subset \mathbb{P}(1^{13}, 4, 6)$
46	4	2	$X_{2^2,8,12} \subset \mathbb{P}(1^{12}, 4^2, 6)$
47	4	2	$X_{2,3^2,18} \subset \mathbb{P}(1^{13}, 6, 9)$
48	4	2	$X_{2^3,12} \subset \mathbb{P}(1^{13}, 3, 4)$
49	4	3	$X_{2,3^2,12} \subset \mathbb{P}(1^{13}, 4, 6)$
50	4	3	$X_{2^2,3,18} \subset \mathbb{P}(1^{13}, 6, 9)$
51	4	3	$X_{2^2,12^2} \subset \mathbb{P}(1^{11}, 4^2, 6^2)$
52	4	3	$X_{2,3,5,30} \subset \mathbb{P}(1^{12}, 6, 10, 15)$
53	4	4	$X_{2^2,3,12} \subset \mathbb{P}(1^{13}, 4, 6)$
54	4	5	$X_{2^3,12} \subset \mathbb{P}(1^{13}, 4, 6)$
55	5	1	$X_{2,3^3,12} \subset \mathbb{P}(1^{14}, 4, 6)$
56	5	1	$X_{2^3,5,12} \subset \mathbb{P}(1^{14}, 4, 6)$
57	5	1	$X_{2^3,8,12} \subset \mathbb{P}(1^{13}, 4^2, 6)$

#	c	I	Variety
58	5	1	$X_{2^2,3^2,18} \subset \mathbb{P}(1^{14},6,9)$
59	5	1	$X_{2^2,3,12^2} \subset \mathbb{P}(1^{12},4^2,6^2)$
60	5	1	$X_{2,3^2,5,30} \subset \mathbb{P}(1^{13},6,10,15)$
61	5	1	$X_{2^4,12} \subset \mathbb{P}(1^{14},3,4)$
62	5	2	$X_{2^2,3^2,12} \subset \mathbb{P}(1^{14},4,6)$
63	5	2	$X_{2^3,3,18} \subset \mathbb{P}(1^{14},6,9)$
64	5	2	$X_{2^3,12^2} \subset \mathbb{P}(1^{12},4^2,6^2)$
65	5	2	$X_{2^2,3,5,30} \subset \mathbb{P}(1^{13},6,10,15)$
66	5	3	$X_{2^3,3,12} \subset \mathbb{P}(1^{14},4,6)$
67	5	4	$X_{2^4,12} \subset \mathbb{P}(1^{14},4,6)$
68	6	1	$X_{2^3,3^2,12} \subset \mathbb{P}(1^{15},4,6)$
69	6	1	$X_{2^4,3,18} \subset \mathbb{P}(1^{15},6,9)$
70	6	1	$X_{2^4,12^2} \subset \mathbb{P}(1^{13},4^2,6^2)$
71	6	1	$X_{2^3,3,5,30} \subset \mathbb{P}(1^{14},6,10,15)$
72	6	2	$X_{2^4,3,12} \subset \mathbb{P}(1^{15},4,6)$
73	6	3	$X_{2^5,12} \subset \mathbb{P}(1^{15},4,6)$
74	7	1	$X_{2^5,3,12} \subset \mathbb{P}(1^{16},4,6)$
75	7	2	$X_{2^6,12} \subset \mathbb{P}(1^{16},4,6)$
76	8	1	$X_{2^7,12} \subset \mathbb{P}(1^{17},4,6)$

Muhammad Imran Qureshi
Department of Mathematics, King Fahd University of Petroleum & Minerals (KFUPM), Dhahran 31261, Saudi Arabia &
Interdisciplinary Research Center for Intelligent Secure Systems, King Fahd University of Petroleum & Minerals (KFUPM), Dhahran 31261, Saudi Arabia
Email address: imran.qureshi@kfupm.edu.sa