Rank-65605 over GF(64)

January 15, 2021

The equation

The equation of the surface is :

$$X_1^3 + X_0^2 X_3 + X_0 X_1 X_2 = 0$$

(0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(64) is 1090785413

General information

Number of lines	65
Number of points	4161
Number of singular points	65
Number of Eckardt points	0
Number of double points	64
Number of single points	4097
Number of points off lines	0
Number of Hesse planes	0
Number of axes	0
Type of points on lines	65^{65}
Type of lines on points	2^{64}, 1^{4097}

Singular Points

The surface has 65 singular points:

0 : $P_2 = \mathbf{P}(0,0,1,0) = \mathbf{P}(0,0,1,0)$
1 : $P_3 = \mathbf{P}(0,0,0,1) = \mathbf{P}(0,0,0,1)$
2 : $P_{8258} = \mathbf{P}(0,0,1,1) = \mathbf{P}(0,0,1,1)$
3 : $P_{12353} = \mathbf{P}(0,0,\epsilon,1) = \mathbf{P}(0,0,2,1)$
4 : $P_{16449} = \mathbf{P}(0,0,\epsilon^{58},1) = \mathbf{P}(0,0,3,1)$
5 : $P_{20545} = \mathbf{P}(0,0,\epsilon^{2},1) = \mathbf{P}(0,0,4,1)$
6 : $P_{24641} = \mathbf{P}(0,0,\epsilon^{53},1) = \mathbf{P}(0,0,5,1)$
7 : $P_{28737} = \mathbf{P}(0,0,\epsilon^{59},1) = \mathbf{P}(0,0,6,1)$
8 : $P_{32833} = \mathbf{P}(0,0,\epsilon^{39},1) = \mathbf{P}(0,0,7,1)$
9 : $P_{36929} = \mathbf{P}(0,0,\epsilon^{3},1) = \mathbf{P}(0,0,8,1)$
10 : $P_{41025} = \mathbf{P}(0,0,\epsilon^{34},1) = \mathbf{P}(0,0,9,1)$
11 : $P_{45121} = \mathbf{P}(0,0,\epsilon^{54},1) = \mathbf{P}(0,0,10,1)$
12 : $P_{49217} = \mathbf{P}(0,0,\epsilon^{18},1) = \mathbf{P}(0,0,11,1)$
13 : $P_{53313} = \mathbf{P}(0,0,\epsilon^{60},1) = \mathbf{P}(0,0,12,1)$
14 : $P_{57409} = \mathbf{P}(0,0,\epsilon^{31},1) = \mathbf{P}(0,0,13,1)$
15 : $P_{61505} = \mathbf{P}(0,0,\epsilon^{40},1) = \mathbf{P}(0,0,14,1)$
16 : $P_{65601} = \mathbf{P}(0,0,\epsilon^{48},1) = \mathbf{P}(0,0,15,1)$
17 : $P_{69697} = \mathbf{P}(0,0,\epsilon^{4},1) = \mathbf{P}(0,0,16,1)$

$18: P_{73793} = \mathbf{P}(0,0,\epsilon^{43},1) = \mathbf{P}(0,0,17,1)$
$19: P_{77889} = \mathbf{P}(0,0,\epsilon^{35},1) = \mathbf{P}(0,0,18,1)$
$20: P_{81985} = \mathbf{P}(0,0,\epsilon^{22},1) = \mathbf{P}(0,0,19,1)$
$21: P_{86081} = \mathbf{P}(0,0,\epsilon^{55},1) = \mathbf{P}(0,0,20,1)$
$22: P_{90177} = \mathbf{P}(0,0,\epsilon^{15},1) = \mathbf{P}(0,0,21,1)$
$23: P_{94273} = \mathbf{P}(0,0,\epsilon^{19},1) = \mathbf{P}(0,0,22,1)$
$24: P_{98369} = \mathbf{P}(0,0,\epsilon^{26},1) = \mathbf{P}(0,0,23,1)$
$25: P_{102465} = \mathbf{P}(0,0,\epsilon^{61},1) = \mathbf{P}(0,0,24,1)$
$26: P_{106561} = \mathbf{P}(0,0,\epsilon^{51},1) = \mathbf{P}(0,0,25,1)$
$27: P_{110657} = \mathbf{P}(0,0,\epsilon^{32},1) = \mathbf{P}(0,0,26,1)$
$28: P_{114753} = \mathbf{P}(0,0,\epsilon^{29},1) = \mathbf{P}(0,0,27,1)$
$29: P_{118849} = \mathbf{P}(0,0,\epsilon^{41},1) = \mathbf{P}(0,0,28,1)$
$30: P_{122945} = \mathbf{P}(0,0,\epsilon^{13},1) = \mathbf{P}(0,0,29,1)$
$31: P_{127041} = \mathbf{P}(0,0,\epsilon^{49},1) = \mathbf{P}(0,0,30,1)$
$32: P_{131137} = \mathbf{P}(0,0,\epsilon^{11},1) = \mathbf{P}(0,0,31,1)$
$33: P_{135233} = \mathbf{P}(0,0,\epsilon^{5},1) = \mathbf{P}(0,0,32,1)$
$34: P_{139329} = \mathbf{P}(0,0,\epsilon^{6},1) = \mathbf{P}(0,0,33,1)$
$35: P_{143425} = \mathbf{P}(0,0,\epsilon^{44},1) = \mathbf{P}(0,0,34,1)$
$36: P_{147521} = \mathbf{P}(0,0,\epsilon^{7},1) = \mathbf{P}(0,0,35,1)$
$37: P_{151617} = \mathbf{P}(0,0,\epsilon^{36},1) = \mathbf{P}(0,0,36,1)$
$38: P_{155713} = \mathbf{P}(0,0,\epsilon^{45},1) = \mathbf{P}(0,0,37,1)$
$39: P_{159809} = \mathbf{P}(0,0,\epsilon^{23},1) = \mathbf{P}(0,0,38,1)$
$40: P_{163905} = \mathbf{P}(0,0,\epsilon^{8},1) = \mathbf{P}(0,0,39,1)$
$41: P_{168001} = \mathbf{P}(0,0,\epsilon^{56},1) = \mathbf{P}(0,0,40,1)$
$42: P_{172097} = \mathbf{P}(0,0,\epsilon^{37},1) = \mathbf{P}(0,0,41,1)$
$43: P_{176193} = \mathbf{P}(0,0,\epsilon^{16},1) = \mathbf{P}(0,0,42,1)$
$44: P_{180289} = \mathbf{P}(0,0,\epsilon^{46},1) = \mathbf{P}(0,0,43,1)$
$45: P_{184385} = \mathbf{P}(0,0,\epsilon^{20},1) = \mathbf{P}(0,0,44,1)$
$46: P_{188481} = \mathbf{P}(0,0,\epsilon^{24},1) = \mathbf{P}(0,0,45,1)$
$47: P_{192577} = \mathbf{P}(0,0,\epsilon^{27},1) = \mathbf{P}(0,0,46,1)$
$48: P_{196673} = \mathbf{P}(0,0,\epsilon^{9},1) = \mathbf{P}(0,0,47,1)$
$49: P_{200769} = \mathbf{P}(0,0,\epsilon^{62},1) = \mathbf{P}(0,0,48,1)$
$50: P_{204865} = \mathbf{P}(0,0,\epsilon^{57},1) = \mathbf{P}(0,0,49,1)$
$51: P_{208961} = \mathbf{P}(0,0,\epsilon^{52},1) = \mathbf{P}(0,0,50,1)$
$52: P_{213057} = \mathbf{P}(0,0,\epsilon^{38},1) = \mathbf{P}(0,0,51,1)$
$53: P_{217153} = \mathbf{P}(0,0,\epsilon^{33},1) = \mathbf{P}(0,0,52,1)$
$54: P_{221249} = \mathbf{P}(0,0,\epsilon^{17},1) = \mathbf{P}(0,0,53,1)$
$55: P_{225345} = \mathbf{P}(0,0,\epsilon^{30},1) = \mathbf{P}(0,0,54,1)$
$56: P_{229441} = \mathbf{P}(0,0,\epsilon^{47},1) = \mathbf{P}(0,0,55,1)$
$57: P_{233537} = \mathbf{P}(0,0,\epsilon^{42},1) = \mathbf{P}(0,0,56,1)$
$58: P_{237633} = \mathbf{P}(0,0,\epsilon^{21},1) = \mathbf{P}(0,0,57,1)$
$59: P_{241729} = \mathbf{P}(0,0,\epsilon^{14},1) = \mathbf{P}(0,0,58,1)$
$60: P_{245825} = \mathbf{P}(0,0,\epsilon^{25},1) = \mathbf{P}(0,0,59,1)$
$61: P_{249921} = \mathbf{P}(0,0,\epsilon^{50},1) = \mathbf{P}(0,0,60,1)$
$62: P_{254017} = \mathbf{P}(0,0,\epsilon^{28},1) = \mathbf{P}(0,0,61,1)$
$63: P_{258113} = \mathbf{P}(0,0,\epsilon^{12},1) = \mathbf{P}(0,0,62,1)$
$64: P_{262209} = \mathbf{P}(0,0,\epsilon^{10},1) = \mathbf{P}(0,0,63,1)$

The 65 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4096} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4096} = \mathbf{Pl}(0,0,1,0,0,0)_2$$

$$\ell_1 = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047616} = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047616} = \mathbf{Pl}(0,1,0,0,0,0)_1$$

$$\ell_2 = \begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{274562} = \begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{274562} = \mathbf{Pl}(0,1,1,1,1,1)_{544642}$$

$$\ell_3 = \begin{bmatrix} 1 & \epsilon^{62} & 0 & \epsilon^{60} \\ 0 & 0 & 1 & \epsilon^{62} \end{bmatrix}_{3399520} = \begin{bmatrix} 1 & 48 & 0 & 12 \\ 0 & 0 & 1 & 48 \end{bmatrix}_{3399520} = \mathbf{Pl}(0,24,2,48,1,1)_{544792}$$

$$\ell_4 = \begin{bmatrix} 1 & \epsilon^{5} & 0 & \epsilon^{15} \\ 0 & 0 & 1 & \epsilon^{5} \end{bmatrix}_{5729664} = \begin{bmatrix} 1 & 32 & 0 & 21 \\ 0 & 0 & 1 & 32 \end{bmatrix}_{5729664} = \mathbf{Pl}(0,63,3,32,1,1)_{544958}$$

$$\ell_5 = \begin{bmatrix} 1 & \epsilon^{61} & 0 & \epsilon^{57} \\ 0 & 0 & 1 & \epsilon^{61} \end{bmatrix}_{13152880} = \begin{bmatrix} 1 & 24 & 0 & 49 \\ 0 & 0 & 1 & 24 \end{bmatrix}_{13152880} = \mathbf{Pl}(0,6,4,24,1,1)_{545028}$$

$$\ell_6 = \begin{bmatrix} 1 & \epsilon^{10} & 0 & \epsilon^{30} \\ 0 & 0 & 1 & \epsilon^{10} \end{bmatrix}_{14646718} = \begin{bmatrix} 1 & 63 & 0 & 54 \\ 0 & 0 & 1 & 63 \end{bmatrix}_{14646718} = \mathbf{Pl}(0,44,5,63,1,1)_{545193}$$

$$\ell_7 = \begin{bmatrix} 1 & \epsilon^{4} & 0 & \epsilon^{12} \\ 0 & 0 & 1 & \epsilon^{4} \end{bmatrix}_{16581536} = \begin{bmatrix} 1 & 16 & 0 & 62 \\ 0 & 0 & 1 & 16 \end{bmatrix}_{16581536} = \mathbf{Pl}(0,39,6,16,1,1)_{545315}$$

$$\ell_8 = \begin{bmatrix} 1 & \epsilon^{24} & 0 & \epsilon^{9} \\ 0 & 0 & 1 & \epsilon^{24} \end{bmatrix}_{12707674} = \begin{bmatrix} 1 & 45 & 0 & 47 \\ 0 & 0 & 1 & 45 \end{bmatrix}_{12707674} = \mathbf{Pl}(0,15,7,45,1,1)_{545418}$$

$$\ell_9 = \begin{bmatrix} 1 & \epsilon^{60} & 0 & \epsilon^{54} \\ 0 & 0 & 1 & \epsilon^{60} \end{bmatrix}_{2717080} = \begin{bmatrix} 1 & 12 & 0 & 10 \\ 0 & 0 & 1 & 12 \end{bmatrix}_{2717080} = \mathbf{Pl}(0,49,8,12,1,1)_{545579}$$

$$\ell_{10} = \left[\begin{array}{cccc} 1 & \epsilon^{29} & 0 & \epsilon^{24} \\ 0 & 0 & 1 & \epsilon^{29} \end{array}\right]_{12100150} = \left[\begin{array}{cccc} 1 & 27 & 0 & 45 \\ 0 & 0 & 1 & 27 \end{array}\right]_{12100150} = \mathbf{Pl}(0,3,9,27,1,1)_{545660}$$

$$\ell_{11} = \left[\begin{array}{cccc} 1 & \epsilon^{9} & 0 & \epsilon^{27} \\ 0 & 0 & 1 & \epsilon^{9} \end{array}\right]_{12449694} = \left[\begin{array}{cccc} 1 & 47 & 0 & 46 \\ 0 & 0 & 1 & 47 \end{array}\right]_{12449694} = \mathbf{Pl}(0,11,10,47,1,1)_{545795}$$

$$\ell_{12} = \left[\begin{array}{cccc} 1 & \epsilon^{45} & 0 & \epsilon^{9} \\ 0 & 0 & 1 & \epsilon^{45} \end{array}\right]_{12674378} = \left[\begin{array}{cccc} 1 & 37 & 0 & 47 \\ 0 & 0 & 1 & 37 \end{array}\right]_{12674378} = \mathbf{Pl}(0,46,11,37,1,1)_{545957}$$

$$\ell_{13} = \left[\begin{array}{cccc} 1 & \epsilon^{3} & 0 & \epsilon^{9} \\ 0 & 0 & 1 & \epsilon^{3} \end{array}\right]_{12553680} = \left[\begin{array}{cccc} 1 & 8 & 0 & 47 \\ 0 & 0 & 1 & 8 \end{array}\right]_{12553680} = \mathbf{Pl}(0,33,12,8,1,1)_{546071}$$

$$\ell_{14} = \left[\begin{array}{cccc} 1 & \epsilon^{32} & 0 & \epsilon^{33} \\ 0 & 0 & 1 & \epsilon^{32} \end{array}\right]_{13960116} = \left[\begin{array}{cccc} 1 & 26 & 0 & 52 \\ 0 & 0 & 1 & 26 \end{array}\right]_{13960116} = \mathbf{Pl}(0,2,13,26,1,1)_{546167}$$

$$\ell_{15} = \left[\begin{array}{cccc} 1 & \epsilon^{23} & 0 & \epsilon^{6} \\ 0 & 0 & 1 & \epsilon^{23} \end{array}\right]_{8950284} = \left[\begin{array}{cccc} 1 & 38 & 0 & 33 \\ 0 & 0 & 1 & 38 \end{array}\right]_{8950284} = \mathbf{Pl}(0,43,14,38,1,1)_{546335}$$

$$\ell_{16} = \left[\begin{array}{cccc} 1 & \epsilon^{15} & 0 & \epsilon^{45} \\ 0 & 0 & 1 & \epsilon^{15} \end{array}\right]_{9944746} = \left[\begin{array}{cccc} 1 & 21 & 0 & 37 \\ 0 & 0 & 1 & 21 \end{array}\right]_{9944746} = \mathbf{Pl}(0,54,15,21,1,1)_{546473}$$

$$\ell_{17} = \left[\begin{array}{cccc} 1 & \epsilon^{59} & 0 & \epsilon^{51} \\ 0 & 0 & 1 & \epsilon^{59} \end{array}\right]_{6686668} = \left[\begin{array}{cccc} 1 & 6 & 0 & 25 \\ 0 & 0 & 1 & 6 \end{array}\right]_{6686668} = \mathbf{Pl}(0,20,16,6,1,1)_{546566}$$

$$\ell_{18} = \left[\begin{array}{cccc} 1 & \epsilon^{20} & 0 & \epsilon^{60} \\ 0 & 0 & 1 & \epsilon^{20} \end{array}\right]_{3382872} = \left[\begin{array}{cccc} 1 & 44 & 0 & 12 \\ 0 & 0 & 1 & 44 \end{array}\right]_{3382872} = \mathbf{Pl}(0,14,17,44,1,1)_{546687}$$

$$\ell_{19} = \left[\begin{array}{cccc} 1 & \epsilon^{28} & 0 & \epsilon^{21} \\ 0 & 0 & 1 & \epsilon^{28} \end{array}\right]_{15437306} = \left[\begin{array}{cccc} 1 & 61 & 0 & 57 \\ 0 & 0 & 1 & 61 \end{array}\right]_{15437306} = \mathbf{Pl}(0,40,18,61,1,1)_{546840}$$

$$\ell_{20} = \left[\begin{array}{cccc} 1 & \epsilon^{41} & 0 & \epsilon^{60} \\ 0 & 0 & 1 & \epsilon^{41} \end{array}\right]_{3316280} = \left[\begin{array}{cccc} 1 & 28 & 0 & 12 \\ 0 & 0 & 1 & 28 \end{array}\right]_{3316280} = \mathbf{Pl}(0,22,19,28,1,1)_{546949}$$

$$\ell_{21} = \left[\begin{array}{cccc} 1 & \epsilon^{8} & 0 & \epsilon^{24} \\ 0 & 0 & 1 & \epsilon^{8} \end{array}\right]_{12150094} = \left[\begin{array}{cccc} 1 & 39 & 0 & 45 \\ 0 & 0 & 1 & 39 \end{array}\right]_{12150094} = \mathbf{Pl}(0,42,20,39,1,1)_{547096}$$

$$\ell_{22} = \left[\begin{array}{cccc} 1 & \epsilon^{48} & 0 & \epsilon^{18} \\ 0 & 0 & 1 & \epsilon^{48} \end{array}\right]_{2995870} = \left[\begin{array}{cccc} 1 & 15 & 0 & 11 \\ 0 & 0 & 1 & 15 \end{array}\right]_{2995870} = \mathbf{Pl}(0,52,21,15,1,1)_{547233}$$

$$\ell_{23} = \left[\begin{array}{cccc} 1 & \epsilon^{44} & 0 & \epsilon^{6} \\ 0 & 0 & 1 & \epsilon^{44} \end{array}\right]_{8933636} = \left[\begin{array}{cccc} 1 & 34 & 0 & 33 \\ 0 & 0 & 1 & 34 \end{array}\right]_{8933636} = \mathbf{Pl}(0,59,22,34,1,1)_{547367}$$

$$\ell_{24} = \left[\begin{array}{cccc} 1 & \epsilon^{37} & 0 & \epsilon^{48} \\ 0 & 0 & 1 & \epsilon^{37} \end{array}\right]_{4169298} = \left[\begin{array}{cccc} 1 & 41 & 0 & 15 \\ 0 & 0 & 1 & 41 \end{array}\right]_{4169298} = \mathbf{Pl}(0,31,23,41,1,1)_{547466}$$

$$\ell_{25} = \left[\begin{array}{cccc} 1 & \epsilon^{2} & 0 & \epsilon^{6} \\ 0 & 0 & 1 & \epsilon^{2} \end{array}\right]_{8808776} = \left[\begin{array}{cccc} 1 & 4 & 0 & 33 \\ 0 & 0 & 1 & 4 \end{array}\right]_{8808776} = \mathbf{Pl}(0,16,24,4,1,1)_{547578}$$

$$\ell_{26} = \left[\begin{array}{cccc} 1 & \epsilon^{12} & 0 & \epsilon^{36} \\ 0 & 0 & 1 & \epsilon^{12} \end{array}\right]_{9849084} = \left[\begin{array}{cccc} 1 & 62 & 0 & 36 \\ 0 & 0 & 1 & 62 \end{array}\right]_{9849084} = \mathbf{Pl}(0,45,25,62,1,1)_{547734}$$

$$\ell_{27} = \left[\begin{array}{cccc} 1 & \epsilon^{31} & 0 & \epsilon^{30} \\ 0 & 0 & 1 & \epsilon^{31} \end{array}\right]_{14438618} = \left[\begin{array}{cccc} 1 & 13 & 0 & 54 \\ 0 & 0 & 1 & 13 \end{array}\right]_{14438618} = \mathbf{Pl}(0,48,26,13,1,1)_{547864}$$

$$\ell_{28} = \left[\begin{array}{cccc} 1 & \epsilon^{34} & 0 & \epsilon^{39} \\ 0 & 0 & 1 & \epsilon^{34} \end{array}\right]_{1905682} = \left[\begin{array}{cccc} 1 & 9 & 0 & 7 \\ 0 & 0 & 1 & 9 \end{array}\right]_{1905682} = \mathbf{Pl}(0,32,27,9,1,1)_{547975}$$

$$\ell_{29} = \left[\begin{array}{cccc} 1 & \epsilon^{22} & 0 & \epsilon^{3} \\ 0 & 0 & 1 & \epsilon^{22} \end{array}\right]_{2213606} = \left[\begin{array}{cccc} 1 & 19 & 0 & 8 \\ 0 & 0 & 1 & 19 \end{array}\right]_{2213606} = \mathbf{Pl}(0,34,28,19,1,1)_{548104}$$

$$\ell_{30} = \left[\begin{array}{cccc} 1 & \epsilon^{50} & 0 & \epsilon^{24} \\ 0 & 0 & 1 & \epsilon^{50} \end{array}\right]_{12237496} = \left[\begin{array}{cccc} 1 & 60 & 0 & 45 \\ 0 & 0 & 1 & 60 \end{array}\right]_{12237496} = \mathbf{Pl}(0,41,29,60,1,1)_{548238}$$

$$\ell_{31} = \begin{bmatrix} 1 & \epsilon^{14} & 0 & \epsilon^{42} \\ 0 & 0 & 1 & \epsilon^{14} \end{bmatrix}_{15158516} = \begin{bmatrix} 1 & 58 & 0 & 56 \\ 0 & 0 & 1 & 58 \end{bmatrix}_{15158516} = \mathbf{Pl}(0, 61, 30, 58, 1, 1)_{548385}$$

$$\ell_{32} = \begin{bmatrix} 1 & \epsilon^{52} & 0 & \epsilon^{30} \\ 0 & 0 & 1 & \epsilon^{52} \end{bmatrix}_{14592612} = \begin{bmatrix} 1 & 50 & 0 & 54 \\ 0 & 0 & 1 & 50 \end{bmatrix}_{14592612} = \mathbf{Pl}(0, 28, 31, 50, 1, 1)_{548479}$$

$$\ell_{33} = \begin{bmatrix} 1 & \epsilon^{58} & 0 & \epsilon^{48} \\ 0 & 0 & 1 & \epsilon^{58} \end{bmatrix}_{4011142} = \begin{bmatrix} 1 & 3 & 0 & 15 \\ 0 & 0 & 1 & 3 \end{bmatrix}_{4011142} = \mathbf{Pl}(0, 5, 32, 3, 1, 1)_{548583}$$

$$\ell_{34} = \begin{bmatrix} 1 & \epsilon^{57} & 0 & \epsilon^{45} \\ 0 & 0 & 1 & \epsilon^{57} \end{bmatrix}_{10061282} = \begin{bmatrix} 1 & 49 & 0 & 37 \\ 0 & 0 & 1 & 49 \end{bmatrix}_{10061282} = \mathbf{Pl}(0, 25, 33, 49, 1, 1)_{548730}$$

$$\ell_{35} = \begin{bmatrix} 1 & \epsilon^{19} & 0 & \epsilon^{57} \\ 0 & 0 & 1 & \epsilon^{19} \end{bmatrix}_{13144556} = \begin{bmatrix} 1 & 22 & 0 & 49 \\ 0 & 0 & 1 & 22 \end{bmatrix}_{13144556} = \mathbf{Pl}(0, 51, 34, 22, 1, 1)_{548883}$$

$$\ell_{36} = \begin{bmatrix} 1 & \epsilon^{56} & 0 & \epsilon^{42} \\ 0 & 0 & 1 & \epsilon^{56} \end{bmatrix}_{15083600} = \begin{bmatrix} 1 & 40 & 0 & 56 \\ 0 & 0 & 1 & 40 \end{bmatrix}_{15083600} = \mathbf{Pl}(0, 30, 35, 40, 1, 1)_{548989}$$

$$\ell_{37} = \begin{bmatrix} 1 & \epsilon^{27} & 0 & \epsilon^{18} \\ 0 & 0 & 1 & \epsilon^{27} \end{bmatrix}_{3124892} = \begin{bmatrix} 1 & 46 & 0 & 11 \\ 0 & 0 & 1 & 46 \end{bmatrix}_{3124892} = \mathbf{Pl}(0, 10, 36, 46, 1, 1)_{549096}$$

$$\ell_{38} = \begin{bmatrix} 1 & \epsilon^{18} & 0 & \epsilon^{54} \\ 0 & 0 & 1 & \epsilon^{18} \end{bmatrix}_{2712918} = \begin{bmatrix} 1 & 11 & 0 & 10 \\ 0 & 0 & 1 & 11 \end{bmatrix}_{2712918} = \mathbf{Pl}(0, 36, 37, 11, 1, 1)_{549249}$$

$$\ell_{39} = \begin{bmatrix} 1 & \epsilon^{40} & 0 & \epsilon^{57} \\ 0 & 0 & 1 & \epsilon^{40} \end{bmatrix}_{13111260} = \begin{bmatrix} 1 & 14 & 0 & 49 \\ 0 & 0 & 1 & 14 \end{bmatrix}_{13111260} = \mathbf{Pl}(0, 53, 38, 14, 1, 1)_{549393}$$

$$\ell_{40} = \begin{bmatrix} 1 & \epsilon^{55} & 0 & \epsilon^{39} \\ 0 & 0 & 1 & \epsilon^{55} \end{bmatrix}_{1951464} = \begin{bmatrix} 1 & 20 & 0 & 7 \\ 0 & 0 & 1 & 20 \end{bmatrix}_{1951464} = \mathbf{Pl}(0, 55, 39, 20, 1, 1)_{549522}$$

$$\ell_{41} = \begin{bmatrix} 1 & \epsilon^{7} & 0 & \epsilon^{21} \\ 0 & 0 & 1 & \epsilon^{7} \end{bmatrix}_{15329094} = \begin{bmatrix} 1 & 35 & 0 & 57 \\ 0 & 0 & 1 & 35 \end{bmatrix}_{15329094} = \mathbf{Pl}(0, 58, 40, 35, 1, 1)_{549652}$$

$$\ell_{42} = \begin{bmatrix} 1 & \epsilon^{26} & 0 & \epsilon^{15} \\ 0 & 0 & 1 & \epsilon^{26} \end{bmatrix}_{5692206} = \begin{bmatrix} 1 & 23 & 0 & 21 \\ 0 & 0 & 1 & 23 \end{bmatrix}_{5692206} = \mathbf{Pl}(0, 50, 41, 23, 1, 1)_{549771}$$

$$\ell_{43} = \begin{bmatrix} 1 & \epsilon^{47} & 0 & \epsilon^{15} \\ 0 & 0 & 1 & \epsilon^{47} \end{bmatrix}_{5825390} = \begin{bmatrix} 1 & 55 & 0 & 21 \\ 0 & 0 & 1 & 55 \end{bmatrix}_{5825390} = \mathbf{Pl}(0, 13, 42, 55, 1, 1)_{549861}$$

$$\ell_{44} = \begin{bmatrix} 1 & \epsilon^{17} & 0 & \epsilon^{51} \\ 0 & 0 & 1 & \epsilon^{17} \end{bmatrix}_{6882282} = \begin{bmatrix} 1 & 53 & 0 & 25 \\ 0 & 0 & 1 & 53 \end{bmatrix}_{6882282} = \mathbf{Pl}(0, 9, 43, 53, 1, 1)_{549984}$$

$$\ell_{45} = \begin{bmatrix} 1 & \epsilon^{43} & 0 & \epsilon^{3} \\ 0 & 0 & 1 & \epsilon^{43} \end{bmatrix}_{2205282} = \begin{bmatrix} 1 & 17 & 0 & 8 \\ 0 & 0 & 1 & 17 \end{bmatrix}_{2205282} = \mathbf{Pl}(0, 38, 44, 17, 1, 1)_{550140}$$

$$\ell_{46} = \begin{bmatrix} 1 & \epsilon^{39} & 0 & \epsilon^{54} \\ 0 & 0 & 1 & \epsilon^{39} \end{bmatrix}_{2696270} = \begin{bmatrix} 1 & 7 & 0 & 10 \\ 0 & 0 & 1 & 7 \end{bmatrix}_{2696270} = \mathbf{Pl}(0, 21, 45, 7, 1, 1)_{550250}$$

$$\ell_{47} = \begin{bmatrix} 1 & \epsilon^{36} & 0 & \epsilon^{45} \\ 0 & 0 & 1 & \epsilon^{36} \end{bmatrix}_{10007176} = \begin{bmatrix} 1 & 36 & 0 & 37 \\ 0 & 0 & 1 & 36 \end{bmatrix}_{10007176} = \mathbf{Pl}(0, 47, 46, 36, 1, 1)_{550403}$$

$$\ell_{48} = \begin{bmatrix} 1 & \epsilon^{54} & 0 & \epsilon^{36} \\ 0 & 0 & 1 & \epsilon^{54} \end{bmatrix}_{9632660} = \begin{bmatrix} 1 & 10 & 0 & 36 \\ 0 & 0 & 1 & 10 \end{bmatrix}_{9632660} = \mathbf{Pl}(0, 37, 47, 10, 1, 1)_{550520}$$

$$\ell_{49} = \begin{bmatrix} 1 & \epsilon & 0 & \epsilon^{3} \\ 0 & 0 & 1 & \epsilon \end{bmatrix}_{2142852} = \begin{bmatrix} 1 & 2 & 0 & 8 \\ 0 & 0 & 1 & 2 \end{bmatrix}_{2142852} = \mathbf{Pl}(0, 4, 48, 2, 1, 1)_{550614}$$

$$\ell_{50} = \begin{bmatrix} 1 & \epsilon^{6} & 0 & \epsilon^{18} \\ 0 & 0 & 1 & \epsilon^{6} \end{bmatrix}_{3070786} = \begin{bmatrix} 1 & 33 & 0 & 11 \\ 0 & 0 & 1 & 33 \end{bmatrix}_{3070786} = \mathbf{Pl}(0, 62, 49, 33, 1, 1)_{550799}$$

$$\ell_{51} = \begin{bmatrix} 1 & \epsilon^{11} & 0 & \epsilon^{33} \\ 0 & 0 & 1 & \epsilon^{11} \end{bmatrix}_{13980926} = \begin{bmatrix} 1 & 31 & 0 & 52 \\ 0 & 0 & 1 & 31 \end{bmatrix}_{13980926} = \mathbf{Pl}(0, 19, 50, 31, 1, 1)_{550883}$$

$$\ell_{52} = \begin{bmatrix} 1 & \epsilon^{25} & 0 & \epsilon^{12} \\ 0 & 0 & 1 & \epsilon^{25} \end{bmatrix}_{16760502} = \begin{bmatrix} 1 & 59 & 0 & 62 \\ 0 & 0 & 1 & 59 \end{bmatrix}_{16760502} = \mathbf{Pl}(0, 60, 51, 59, 1, 1)_{551051}$$

$$\ell_{53} = \begin{bmatrix} 1 & \epsilon^{30} & 0 & \epsilon^{27} \\ 0 & 0 & 1 & \epsilon^{30} \end{bmatrix}_{12478828} = \begin{bmatrix} 1 & 54 & 0 & 46 \\ 0 & 0 & 1 & 54 \end{bmatrix}_{12478828} = \mathbf{Pl}(0, 12, 52, 54, 1, 1)_{551130}$$

$$\ell_{54} = \begin{bmatrix} 1 & \epsilon^{46} & 0 & \epsilon^{12} \\ 0 & 0 & 1 & \epsilon^{46} \end{bmatrix}_{16693910} = \begin{bmatrix} 1 & 43 & 0 & 62 \\ 0 & 0 & 1 & 43 \end{bmatrix}_{16693910} = \mathbf{Pl}(0, 27, 53, 43, 1, 1)_{551272}$$

$$\ell_{55} = \begin{bmatrix} 1 & \epsilon^{33} & 0 & \epsilon^{36} \\ 0 & 0 & 1 & \epsilon^{33} \end{bmatrix}_{9807464} = \begin{bmatrix} 1 & 52 & 0 & 36 \\ 0 & 0 & 1 & 52 \end{bmatrix}_{9807464} = \mathbf{Pl}(0, 8, 54, 52, 1, 1)_{551380}$$

$$\ell_{56} = \begin{bmatrix} 1 & \epsilon^{16} & 0 & \epsilon^{48} \\ 0 & 0 & 1 & \epsilon^{16} \end{bmatrix}_{4173460} = \begin{bmatrix} 1 & 42 & 0 & 15 \\ 0 & 0 & 1 & 42 \end{bmatrix}_{4173460} = \mathbf{Pl}(0, 26, 55, 42, 1, 1)_{551525}$$

$$\ell_{57} = \begin{bmatrix} 1 & \epsilon^{21} & 0 & 1 \\ 0 & 0 & 1 & \epsilon^{21} \end{bmatrix}_{507634} = \begin{bmatrix} 1 & 57 & 0 & 1 \\ 0 & 0 & 1 & 57 \end{bmatrix}_{507634} = \mathbf{Pl}(0, 56, 56, 57, 1, 1)_{551682}$$

$$\ell_{58} = \begin{bmatrix} 1 & \epsilon^{42} & 0 & 1 \\ 0 & 0 & 1 & \epsilon^{42} \end{bmatrix}_{503472} = \begin{bmatrix} 1 & 56 & 0 & 1 \\ 0 & 0 & 1 & 56 \end{bmatrix}_{503472} = \mathbf{Pl}(0, 57, 57, 56, 1, 1)_{551810}$$

$$\ell_{59} = \begin{bmatrix} 1 & \epsilon^{49} & 0 & \epsilon^{21} \\ 0 & 0 & 1 & \epsilon^{49} \end{bmatrix}_{15308284} = \begin{bmatrix} 1 & 30 & 0 & 57 \\ 0 & 0 & 1 & 30 \end{bmatrix}_{15308284} = \mathbf{Pl}(0, 18, 58, 30, 1, 1)_{551898}$$

$$\ell_{60} = \begin{bmatrix} 1 & \epsilon^{38} & 0 & \epsilon^{51} \\ 0 & 0 & 1 & \epsilon^{38} \end{bmatrix}_{6873958} = \begin{bmatrix} 1 & 51 & 0 & 25 \\ 0 & 0 & 1 & 51 \end{bmatrix}_{6873958} = \mathbf{Pl}(0, 29, 59, 51, 1, 1)_{552036}$$

$$\ell_{61} = \begin{bmatrix} 1 & \epsilon^{13} & 0 & \epsilon^{39} \\ 0 & 0 & 1 & \epsilon^{13} \end{bmatrix}_{1988922} = \begin{bmatrix} 1 & 29 & 0 & 7 \\ 0 & 0 & 1 & 29 \end{bmatrix}_{1988922} = \mathbf{Pl}(0, 23, 60, 29, 1, 1)_{552157}$$

$$\ell_{62} = \begin{bmatrix} 1 & \epsilon^{35} & 0 & \epsilon^{42} \\ 0 & 0 & 1 & \epsilon^{35} \end{bmatrix}_{14992036} = \begin{bmatrix} 1 & 18 & 0 & 56 \\ 0 & 0 & 1 & 18 \end{bmatrix}_{14992036} = \mathbf{Pl}(0, 35, 61, 18, 1, 1)_{552296}$$

$$\ell_{63} = \begin{bmatrix} 1 & \epsilon^{51} & 0 & \epsilon^{27} \\ 0 & 0 & 1 & \epsilon^{51} \end{bmatrix}_{12358130} = \begin{bmatrix} 1 & 25 & 0 & 46 \\ 0 & 0 & 1 & 25 \end{bmatrix}_{12358130} = \mathbf{Pl}(0, 7, 62, 25, 1, 1)_{552395}$$

$$\ell_{64} = \begin{bmatrix} 1 & \epsilon^{53} & 0 & \epsilon^{33} \\ 0 & 0 & 1 & \epsilon^{53} \end{bmatrix}_{13872714} = \begin{bmatrix} 1 & 5 & 0 & 52 \\ 0 & 0 & 1 & 5 \end{bmatrix}_{13872714} = \mathbf{Pl}(0, 17, 63, 5, 1, 1)_{552532}$$

Rank of lines: (4096, 17047616, 274562, 3399520, 5729664, 13152880, 14646718, 16581536, 12707674, 2717080, 12100150, 12449694, 12674378, 12553680, 13960116, 8950284, 9944746, 6686668, 3382872, 15437306, 3316280, 12150094, 2995870, 8933636, 4169298, 8808776, 9849084, 14438618, 1905682, 2213606, 12237496, 15158516, 14592612, 4011142, 10061282, 13144556, 15083600, 3124892, 2712918, 13111260, 1951464, 15329094, 5692206, 5825390, 6882282, 2205282, 2696270, 10007176, 9632660, 2142852, ...14992036, 12358130, 13872714)

Rank of points on Klein quadric: (2, 1, 544642, 544792, 544958, 545028, 545193, 545315, 545418, 545579, 545660, 545795, 545957, 546071, 546167, 546335, 546473, 546566, 546687, 546840, 546949, 547096, 547233, 547367, 547466, 547578, 547734, 547864, 547975, 548104, 548238, 548385, 548479, 548583, 548730, 548883, 548989, 549096, 549249, 549393, 549522, 549652, 549771, 549861, 549984, 550140, 550250, 550403, 550520, 550614, ...552296, 552395, 552532)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 64 Double points:
The double points on the surface are:

$P_{2} = (0,0,1,0) = \ell_0 \cap \ell_1$
$P_{8258} = (0,0,1,1) = \ell_1 \cap \ell_2$
$P_{12353} = (0,0,2,1) = \ell_1 \cap \ell_3$
$P_{16449} = (0,0,3,1) = \ell_1 \cap \ell_4$
$P_{20545} = (0,0,4,1) = \ell_1 \cap \ell_5$
$P_{24641} = (0,0,5,1) = \ell_1 \cap \ell_6$
$P_{28737} = (0,0,6,1) = \ell_1 \cap \ell_7$
$P_{32833} = (0,0,7,1) = \ell_1 \cap \ell_8$
$P_{36929} = (0,0,8,1) = \ell_1 \cap \ell_9$
$P_{41025} = (0,0,9,1) = \ell_1 \cap \ell_{10}$
$P_{45121} = (0,0,10,1) = \ell_1 \cap \ell_{11}$
$P_{49217} = (0,0,11,1) = \ell_1 \cap \ell_{12}$
$P_{53313} = (0,0,12,1) = \ell_1 \cap \ell_{13}$
$P_{57409} = (0,0,13,1) = \ell_1 \cap \ell_{14}$
$P_{61505} = (0,0,14,1) = \ell_1 \cap \ell_{15}$
$P_{65601} = (0,0,15,1) = \ell_1 \cap \ell_{16}$
$P_{69697} = (0,0,16,1) = \ell_1 \cap \ell_{17}$
$P_{73793} = (0,0,17,1) = \ell_1 \cap \ell_{18}$
$P_{77889} = (0,0,18,1) = \ell_1 \cap \ell_{19}$
$P_{81985} = (0,0,19,1) = \ell_1 \cap \ell_{20}$
$P_{86081} = (0,0,20,1) = \ell_1 \cap \ell_{21}$
$P_{90177} = (0,0,21,1) = \ell_1 \cap \ell_{22}$
$P_{94273} = (0,0,22,1) = \ell_1 \cap \ell_{23}$
$P_{98369} = (0,0,23,1) = \ell_1 \cap \ell_{24}$
$P_{102465} = (0,0,24,1) = \ell_1 \cap \ell_{25}$
$P_{106561} = (0,0,25,1) = \ell_1 \cap \ell_{26}$
$P_{110657} = (0,0,26,1) = \ell_1 \cap \ell_{27}$
$P_{114753} = (0,0,27,1) = \ell_1 \cap \ell_{28}$
$P_{118849} = (0,0,28,1) = \ell_1 \cap \ell_{29}$
$P_{122945} = (0,0,29,1) = \ell_1 \cap \ell_{30}$
$P_{127041} = (0,0,30,1) = \ell_1 \cap \ell_{31}$
$P_{131137} = (0,0,31,1) = \ell_1 \cap \ell_{32}$
$P_{135233} = (0,0,32,1) = \ell_1 \cap \ell_{33}$
$P_{139329} = (0,0,33,1) = \ell_1 \cap \ell_{34}$
$P_{143425} = (0,0,34,1) = \ell_1 \cap \ell_{35}$
$P_{147521} = (0,0,35,1) = \ell_1 \cap \ell_{36}$
$P_{151617} = (0,0,36,1) = \ell_1 \cap \ell_{37}$
$P_{155713} = (0,0,37,1) = \ell_1 \cap \ell_{38}$
$P_{159809} = (0,0,38,1) = \ell_1 \cap \ell_{39}$
$P_{163905} = (0,0,39,1) = \ell_1 \cap \ell_{40}$
$P_{168001} = (0,0,40,1) = \ell_1 \cap \ell_{41}$
$P_{172097} = (0,0,41,1) = \ell_1 \cap \ell_{42}$
$P_{176193} = (0,0,42,1) = \ell_1 \cap \ell_{43}$
$P_{180289} = (0,0,43,1) = \ell_1 \cap \ell_{44}$
$P_{184385} = (0,0,44,1) = \ell_1 \cap \ell_{45}$
$P_{188481} = (0,0,45,1) = \ell_1 \cap \ell_{46}$
$P_{192577} = (0,0,46,1) = \ell_1 \cap \ell_{47}$
$P_{196673} = (0,0,47,1) = \ell_1 \cap \ell_{48}$
$P_{200769} = (0,0,48,1) = \ell_1 \cap \ell_{49}$
$P_{204865} = (0,0,49,1) = \ell_1 \cap \ell_{50}$
$P_{208961} = (0,0,50,1) = \ell_1 \cap \ell_{51}$
$P_{213057} = (0,0,51,1) = \ell_1 \cap \ell_{52}$
$P_{217153} = (0,0,52,1) = \ell_1 \cap \ell_{53}$
$P_{221249} = (0,0,53,1) = \ell_1 \cap \ell_{54}$
$P_{225345} = (0,0,54,1) = \ell_1 \cap \ell_{55}$
$P_{229441} = (0,0,55,1) = \ell_1 \cap \ell_{56}$
$P_{233537} = (0,0,56,1) = \ell_1 \cap \ell_{57}$
$P_{237633} = (0,0,57,1) = \ell_1 \cap \ell_{58}$
$P_{241729} = (0,0,58,1) = \ell_1 \cap \ell_{59}$
$P_{245825} = (0,0,59,1) = \ell_1 \cap \ell_{60}$
$P_{249921} = (0,0,60,1) = \ell_1 \cap \ell_{61}$
$P_{254017} = (0,0,61,1) = \ell_1 \cap \ell_{62}$
$P_{258113} = (0,0,62,1) = \ell_1 \cap \ell_{63}$
$P_{262209} = (0,0,63,1) = \ell_1 \cap \ell_{64}$

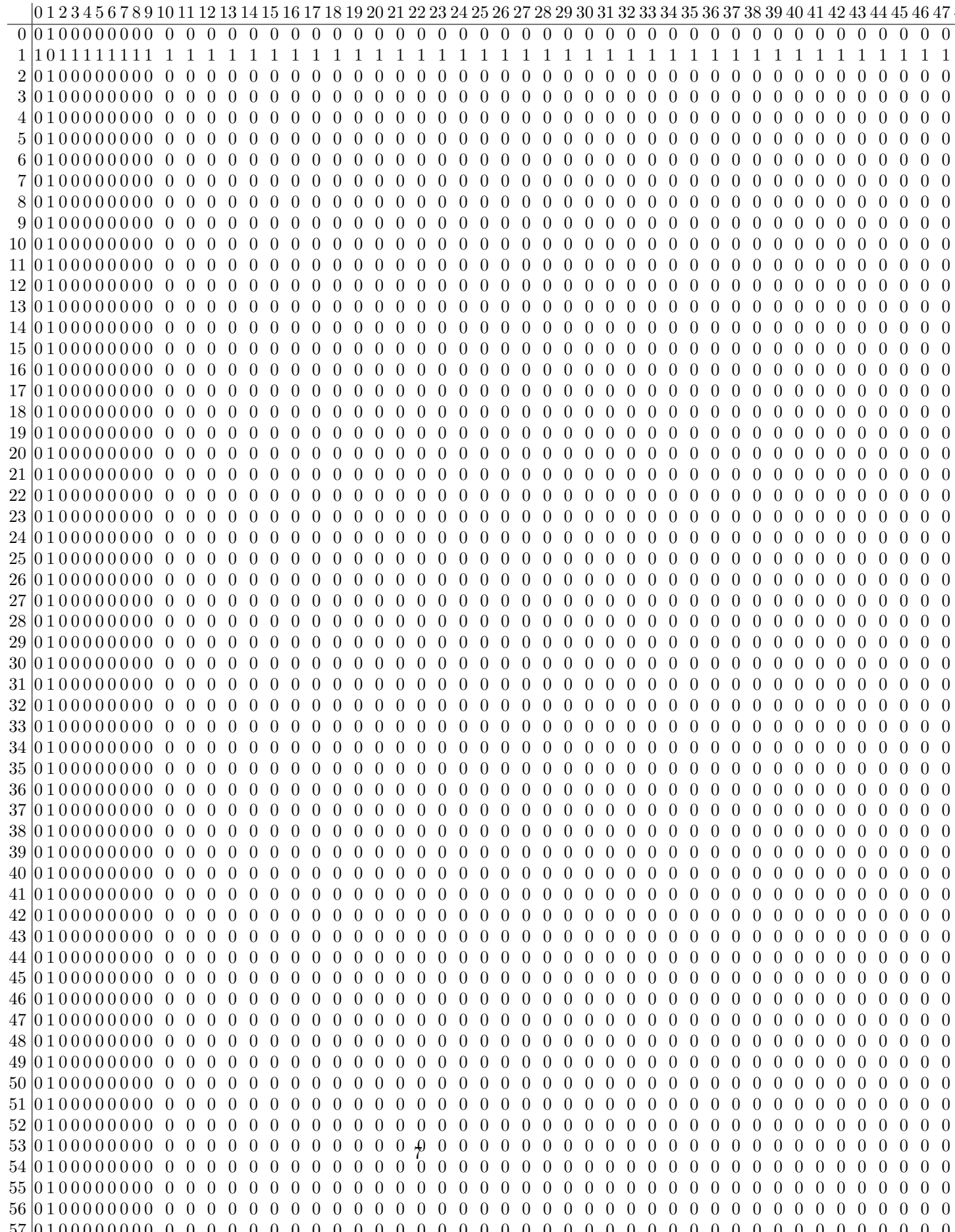
Single Points

The surface has 4097 single points:
Too many to print.

Points on surface but on no line

The surface has 0 points not on any line:
The points on the surface but not on lines are:

Line Intersection Graph



Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_1
in point	P_2

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}
in point	P_2	P_{8258}	P_{12353}	P_{16449}	P_{20545}	P_{24641}	P_{28737}	P_{32833}	P_{36929}	P_{41025}	P_{45121}	P_{49217}	P_{53313}	P_{57409}

Line 2 intersects

Line	ℓ_1
in point	P_{8258}

Line 3 intersects

Line	ℓ_1
in point	P_{12353}

Line 4 intersects

Line	ℓ_1
in point	P_{16449}

Line 5 intersects

Line	ℓ_1
in point	P_{20545}

Line 6 intersects

Line	ℓ_1
in point	P_{24641}

Line 7 intersects

Line	ℓ_1
in point	P_{28737}

Line 8 intersects

Line	ℓ_1
in point	P_{32833}

Line 9 intersects

Line	ℓ_1
in point	P_{36929}

Line 10 intersects

Line	ℓ_1
in point	P_{41025}

Line 11 intersects

Line	ℓ_1
in point	P_{45121}

Line 12 intersects

Line	ℓ_1
in point	P_{49217}

Line 13 intersects

Line	ℓ_1
in point	P_{53313}

Line 14 intersects

Line	ℓ_1
in point	P_{57409}

Line 15 intersects

Line	ℓ_1
in point	P_{61505}

Line 16 intersects

Line	ℓ_1
in point	P_{65601}

Line 17 intersects

Line	ℓ_1
in point	P_{69697}

Line 18 intersects

Line	ℓ_1
in point	P_{73793}

Line 19 intersects

Line	ℓ_1
in point	P_{77889}

Line 20 intersects

Line	ℓ_1
in point	P_{81985}

Line 21 intersects

Line	ℓ_1
in point	P_{86081}

Line 22 intersects

Line	ℓ_1
in point	P_{90177}

Line 23 intersects

Line	ℓ_1
in point	P_{94273}

Line 24 intersects

Line	ℓ_1
in point	P_{98369}

Line 25 intersects

Line	ℓ_1
in point	P_{102465}

Line 26 intersects

Line	ℓ_1
in point	P_{106561}

Line 27 intersects

Line	ℓ_1
in point	P_{110657}

Line 28 intersects

Line	ℓ_1
in point	P_{114753}

Line 29 intersects

Line	ℓ_1
in point	P_{118849}

Line 30 intersects

Line	ℓ_1
in point	P_{122945}

Line 31 intersects

Line	ℓ_1
in point	P_{127041}

Line 32 intersects

Line	ℓ_1
in point	P_{131137}

Line 33 intersects

Line	ℓ_1
in point	P_{135233}

Line 34 intersects

Line	ℓ_1
in point	P_{139329}

Line 35 intersects

Line	ℓ_1
in point	P_{143425}

Line 36 intersects

Line	ℓ_1
in point	P_{147521}

Line 37 intersects

Line	ℓ_1
in point	P_{151617}

Line 38 intersects

Line	ℓ_1
in point	P_{155713}

Line 39 intersects

Line	ℓ_1
in point	P_{159809}

Line 40 intersects

Line	ℓ_1
in point	P_{163905}

Line 41 intersects

Line	ℓ_1
in point	P_{168001}

Line 42 intersects

Line	ℓ_1
in point	P_{172097}

Line 43 intersects

Line	ℓ_1
in point	P_{176193}

Line 44 intersects

Line	ℓ_1
in point	P_{180289}

Line 45 intersects

Line	ℓ_1
in point	P_{184385}

Line 46 intersects

Line	ℓ_1
in point	P_{188481}

Line 47 intersects

Line	ℓ_1
in point	P_{192577}

Line 48 intersects

Line	ℓ_1
in point	P_{196673}

Line 49 intersects

Line	ℓ_1
in point	P_{200769}

Line 50 intersects

Line	ℓ_1
in point	P_{204865}

Line 51 intersects

Line	ℓ_1
in point	P_{208961}

Line 52 intersects

Line	ℓ_1
in point	P_{213057}

Line 53 intersects

Line	ℓ_1
in point	P_{217153}

Line 54 intersects

Line	ℓ_1
in point	P_{221249}

Line 55 intersects

Line	ℓ_1
in point	P_{225345}

Line 56 intersects

Line	ℓ_1
in point	P_{229441}

Line 57 intersects

Line	ℓ_1
in point	P_{233537}

Line 58 intersects

Line	ℓ_1
in point	P_{237633}

Line 59 intersects

Line	ℓ_1
in point	P_{241729}

Line 60 intersects

Line	ℓ_1
in point	P_{245825}

Line 61 intersects

Line	ℓ_1
in point	P_{249921}

Line 62 intersects

Line	ℓ_1
in point	P_{254017}

Line 63 intersects

Line	ℓ_1
in point	P_{258113}

Line 64 intersects

Line	ℓ_1
in point	P_{262209}

The surface has 4161 points:
Too many to print.