1 BLT set 2 over GF(37)

Points on the quadric $x_0^2 + x_1x_2 + x_3x_4$:

$P_1 = (0, 1, 0, 0, 0)$

$P_2 = (0, 0, 1, 0, 0)$

$P_3 = (0, 1, 18, 36, 18)$

$P_4 = (0, 1, 23, 18, 9)$

$P_5 = (0, 1, 2, 12, 6)$

$P_6 = (0, 1, 15, 9, 23)$

$P_7 = (0, 1, 32, 11, 24)$

$P_8 = (0, 1, 19, 31, 34)$

$P_9 = (0, 1, 20, 16, 8)$

$P_{10} = (0, 1, 22, 17, 27)$

$P_{11} = (0, 1, 6, 5, 21)$

$P_{12} = (0, 1, 19, 6, 3)$

$P_{13} = (0, 1, 23, 19, 28)$

$P_{14} = (0, 1, 14, 3, 20)$

$P_{15} = (0, 1, 6, 32, 16)$

$P_{16} = (0, 1, 5, 29, 33)$

$P_{17} = (0, 1, 31, 30, 15)$

$P_{18} = (0, 1, 35, 2, 1)$

$P_{19} = (0, 1, 5, 8, 4)$

$P_{20} = (1, 10, 15, 34, 1)$

$P_{21} = (1, 34, 14, 27, 7)$

$P_{22} = (1, 10, 15, 2, 17)$

$P_{23} = (1, 1, 20, 34, 7)$

$P_{24} = (1, 33, 31, 11, 28)$

$P_{25} = (1, 1, 20, 14, 17)$

$P_{26} = (1, 21, 13, 25, 29)$

$P_{27} = (1, 14, 21, 12, 34)$

$P_{28} = (1, 24, 36, 16, 13)$

$P_{29} = (1, 22, 33, 10, 5)$

$P_{30} = (1, 14, 21, 31, 6)$

$P_{31} = (1, 8, 12, 20, 34)$

$P_{32} = (1, 34, 14, 14, 32)$

$P_{33} = (1, 5, 26, 35, 10)$

$P_{34} = (1, 8, 12, 31, 10)$

$P_{35} = (1, 24, 36, 26, 8)$

$P_{36} = (1, 21, 13, 21, 31)$

$P_{37} = (1, 33, 31, 19, 24)$

$P_{38} = (1, 5, 26, 20, 36)$

Stabilizer of order 2888 is generated by:

$$g_1 = \begin{pmatrix} 31 & 0 & 0 & 25 & 6 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 34 & 0 & 0 & 16 & 11 \\ 6 & 0 & 0 & 7 & 16 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 5 & 0 & 0 & 14 & 30 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 15 & 0 & 0 & 35 & 20 \\ 7 & 0 & 0 & 6 & 35 \end{pmatrix}$$

$$g_3 = \begin{pmatrix} 32 & 0 & 0 & 23 & 7 \\ 0 & 3 & 32 & 20 & 10 \\ 0 & 6 & 21 & 28 & 14 \\ 22 & 19 & 21 & 30 & 31 \\ 30 & 1 & 5 & 13 & 30 \end{pmatrix}$$

$$g_4 = \begin{pmatrix} 32 & 0 & 0 & 14 & 30 \\ 0 & 36 & 0 & 0 & 0 \\ 0 & 31 & 36 & 5 & 21 \\ 15 & 21 & 0 & 3 & 36 \\ 7 & 5 & 0 & 33 & 3 \end{pmatrix}$$

$$g_5 = \begin{pmatrix} 0 & 14 & 12 & 31 & 34 \\ 12 & 30 & 8 & 30 & 2 \\ 12 & 20 & 30 & 33 & 1 \\ 4 & 19 & 31 & 35 & 25 \\ 8 & 34 & 9 & 0 & 15 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 2888 and is generated by:

g_1 =(20, 21, 38, 36, 29, 26, 33, 32, 22, 24, 31, 27, 25, 35, 28, 23, 30, 34, 37)

g_2 =(20, 26)(21, 29)(22, 30)(23, 24)(27, 35)(28, 31)(32, 34)(33, 37)(36, 38)

g_3 =(1, 13, 9, 8, 2, 10, 15, 16, 7, 6, 14, 12, 4, 3, 5, 17, 11, 19, 18)(20, 26)(21, 29)(22, 30)(23, 24)(27, 35)(28, 31)(32, 34)(33, 37)(36, 38)

g_4 =(2, 17)(3, 15)(4, 16)(5, 10)(6, 14)(7, 12)(8, 11)(9, 19)(13, 18)(20, 27)(21, 31)(22, 36)(24, 38)(25, 37)(26, 33)(28, 30)(29, 32)(34, 35)

g_5 =(1, 36, 6, 38)(2, 27, 10, 35)(3, 31, 17, 28)(4, 22, 11, 30)(5, 25)(7, 20, 13, 26)(8, 24, 15, 23)(9, 32, 16, 34)(12, 33, 19, 37)(14, 29, 18, 21)

Kernel has order 1 and is generated by:

There are 1 orbits on the BLT set.

The orbit length are [38]

The orbits are:

$O_0 = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34,$

(length 38)