1 BLT set 10 over GF(41)

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

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

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

$P_3 = (0, 1, 27, 40, 27)$

$P_4 = (0, 1, 6, 28, 32)$

$P_5 = (1, 11, 23, 25, 21)$

$P_6 = (1, 4, 17, 26, 21)$

$P_7 = (1, 4, 35, 28, 14)$

$P_8 = (1, 25, 24, 1, 14)$

$P_9 = (1, 35, 2, 16, 34)$

$P_{10} = (1, 28, 25, 25, 31)$

$P_{11} = (1, 35, 5, 34, 31)$

$P_{12} = (1, 6, 21, 23, 23)$

$P_{13} = (1, 8, 3, 38, 22)$

$P_{14} = (1, 35, 8, 36, 7)$

$P_{15} = (1, 17, 36, 12, 7)$

$P_{16} = (1, 7, 23, 29, 34)$

$P_{17} = (1, 34, 16, 23, 28)$

$P_{18} = (1, 39, 34, 14, 37)$

$P_{19} = (1, 19, 21, 13, 26)$

$P_{20} = (1, 32, 29, 17, 37)$

$P_{21} = (1, 17, 2, 34, 5)$

$P_{22} = (1, 9, 28, 39, 24)$

$P_{23} = (1, 38, 16, 29, 20)$

$P_{24} = (1, 30, 23, 9, 28)$

$P_{25} = (1, 9, 28, 37, 12)$

$P_{26} = (1, 9, 3, 5, 19)$

$P_{27} = (1, 4, 6, 15, 12)$

$P_{28} = (1, 17, 39, 5, 23)$

$P_{29} = (1, 21, 11, 36, 30)$

$P_{30} = (1, 28, 4, 14, 30)$

$P_{31} = (1, 33, 3, 17, 11)$

$P_{32} = (1, 22, 32, 22, 22)$

$P_{33} = (1, 18, 19, 1, 26)$

$P_{34} = (1, 30, 16, 12, 18)$

$P_{35} = (1, 10, 17, 38, 16)$

$P_{36} = (1, 2, 30, 37, 5)$

$P_{37} = (1, 40, 22, 9, 16)$

$P_{38} = (1, 29, 37, 15, 35)$

$P_{39} = (1, 15, 21, 39, 35)$

$P_{40} = (1, 10, 17, 35, 8)$

$P_{41} = (1, 28, 1, 22, 8)$

$P_{42} = (1, 1, 26, 13, 20)$

Stabilizer of order 68880 is generated by:

$$g_1 = \begin{pmatrix} 21 & 0 & 0 & 4 & 13 \\ 0 & 0 & 34 & 0 & 0 \\ 33 & 35 & 21 & 5 & 37 \\ 32 & 0 & 34 & 31 & 4 \\ 35 & 0 & 20 & 25 & 33 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 21 & 0 & 0 & 34 & 16 \\ 0 & 33 & 0 & 0 & 0 \\ 0 & 26 & 5 & 15 & 5 \\ 27 & 12 & 0 & 38 & 38 \\ 2 & 31 & 0 & 28 & 35 \end{pmatrix}$$

$$g_3 = \begin{pmatrix} 17 & 0 & 0 & 39 & 21 \\ 0 & 25 & 0 & 0 & 0 \\ 0 & 0 & 23 & 0 & 0 \\ 4 & 0 & 0 & 20 & 32 \\ 23 & 0 & 0 & 2 & 2 \end{pmatrix}$$

$$g_4 = \begin{pmatrix} 34 & 0 & 0 & 24 & 39 \\ 0 & 20 & 0 & 0 & 0 \\ 0 & 0 & 39 & 0 & 0 \\ 34 & 0 & 0 & 28 & 29 \\ 31 & 0 & 0 & 30 & 24 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 68880 and is generated by:

g_1 =(1, 2, 5, 35, 42, 28, 41, 25, 21, 6, 9, 26, 20, 11, 29, 19, 38, 30, 22, 27, 23, 15, 8, 13, 16, 18, 33, 37, 31, 34, 24, 10, 14, 17, 39, 7, 40, 32, 12, 3)

g_2 =(2, 3, 11, 25, 34, 18, 30, 24, 41, 14, 17, 28, 40, 33, 31, 37, 7, 9, 27, 29, 12, 21, 20, 13, 35, 23, 6, 32, 42, 8, 19, 22, 16, 26, 39, 10, 38, 15, 5, 4)

g_3 =(3, 31, 29, 25, 18, 9, 16, 27, 6, 28, 17, 36, 41, 32, 12, 19, 20, 23, 22, 24)(4, 21, 40, 14, 8, 30, 10, 38, 39, 37, 11, 5, 26, 13, 15, 34, 33, 35, 42, 7)

g_4 =(3, 14, 23, 4, 12, 35, 36, 15, 6, 5, 9, 39, 29, 30, 24, 40, 20, 7, 32, 33, 17, 13, 27, 11, 18, 38, 31, 8, 22, 21, 19, 42, 41, 34, 28, 26, 16, 37, 25, 10)

Kernel has order 1 and is generated by:

There are 1 orbits on the BLT set.

The orbit length are [42]

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 42)