1 BLT set 2 over GF(29)

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

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

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

$P_3 = (0, 1, 14, 28, 14)$

$P_4 = (0, 1, 18, 14, 7)$

$P_5 = (0, 1, 8, 19, 24)$

$P_6 = (0, 1, 19, 7, 18)$

$P_7 = (0, 1, 11, 23, 26)$

$P_8 = (0, 1, 19, 22, 11)$

$P_9 = (0, 1, 12, 11, 20)$

$P_{10} = (0, 1, 3, 20, 10)$

$P_{11} = (0, 1, 17, 13, 21)$

$P_{12} = (0, 1, 27, 2, 1)$

$P_{13} = (0, 1, 17, 16, 8)$

$P_{14} = (0, 1, 11, 6, 3)$

$P_{15} = (0, 1, 10, 26, 13)$

$P_{16} = (1, 18, 6, 5, 13)$

$P_{17} = (1, 17, 25, 20, 28)$

$P_{18} = (1, 18, 6, 26, 17)$

$P_{19} = (1, 15, 5, 5, 8)$

$P_{20} = (1, 7, 12, 2, 1)$

$P_{21} = (1, 21, 7, 25, 8)$

$P_{22} = (1, 17, 25, 27, 10)$

$P_{23} = (1, 20, 26, 21, 18)$

$P_{24} = (1, 20, 26, 7, 25)$

$P_{25} = (1, 1, 10, 9, 2)$

$P_{26} = (1, 1, 10, 4, 19)$

$P_{27} = (1, 26, 28, 22, 13)$

$P_{28} = (1, 15, 5, 16, 17)$

$P_{29} = (1, 26, 28, 26, 11)$

$P_{30} = (1, 21, 7, 16, 27)$

Stabilizer of order 1800 is generated by:

$$g_1 = \begin{pmatrix} 25 & 0 & 0 & 28 & 15 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 7 & 0 & 0 & 13 & 23 \\ 15 & 0 & 0 & 5 & 13 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 19 & 0 & 0 & 13 & 8 \\ 0 & 28 & 0 & 0 & 0 \\ 0 & 0 & 28 & 0 & 0 \\ 4 & 0 & 0 & 19 & 19 \\ 21 & 0 & 0 & 18 & 19 \end{pmatrix}$$

$$g_3 = \begin{pmatrix} 19 & 0 & 0 & 16 & 21 \\ 0 & 28 & 12 & 16 & 8 \\ 0 & 0 & 28 & 0 & 0 \\ 25 & 0 & 8 & 20 & 5 \\ 8 & 0 & 16 & 20 & 20 \end{pmatrix}$$

$$g_4 = \begin{pmatrix} 7 & 0 & 0 & 26 & 16 \\ 0 & 5 & 26 & 1 & 15 \\ 0 & 14 & 5 & 18 & 9 \\ 8 & 9 & 15 & 21 & 14 \\ 13 & 18 & 1 & 27 & 21 \end{pmatrix}$$

$$g_5 = \begin{pmatrix} 14 & 0 & 0 & 10 & 24 \\ 0 & 24 & 21 & 6 & 3 \\ 0 & 10 & 24 & 19 & 24 \\ 17 & 24 & 3 & 27 & 21 \\ 24 & 19 & 6 & 26 & 27 \end{pmatrix}$$

$$g_6 = \begin{pmatrix} 14 & 0 & 0 & 10 & 24 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 8 & 1 & 10 & 5 \\ 17 & 5 & 0 & 21 & 18 \\ 24 & 10 & 0 & 14 & 21 \end{pmatrix}$$

$$g_7 = \begin{pmatrix} 0 & 21 & 19 & 25 & 27 \\ 3 & 16 & 15 & 15 & 24 \\ 22 & 19 & 16 & 21 & 26 \\ 23 & 18 & 26 & 11 & 28 \\ 17 & 8 & 11 & 0 & 16 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 1800 and is generated by:

g_1 =(16, 27, 25, 19, 22, 21, 30, 17, 28, 26, 29, 18, 23, 20, 24)

g_2 =(16, 19)(17, 18)(20, 21)(22, 24)(23, 30)(25, 27)(28, 29)

g_3 =(1, 11)(3, 4)(5, 7)(6, 14)(8, 10)(9, 12)(13, 15)(16, 22)(17, 23)(18, 28)(19, 27)(20, 30)(21, 24)(26, 29)

g_4 =(1, 14)(2, 8)(3, 11)(4, 6)(5, 9)(7, 15)(12, 13)(16, 17)(19, 22)(20, 26)(21, 25)(23, 29)(24, 28)(27, 30)

g_5 =(1, 8)(2, 3)(4, 13)(6, 10)(7, 14)(9, 11)(12, 15)(16, 21, 29)(17, 23, 25)(18, 27, 30)(19, 28, 20)(22, 26, 24)

g_6 =(2, 7)(3, 6)(4, 5)(8, 13)(9, 10)(11, 12)(14, 15)(16, 21, 29)(17, 23, 25)(18, 27, 30)(19, 28, 20)(22, 26, 24)

g_7 =(1, 19, 5, 23)(2, 18, 11, 22)(3, 20, 12, 25)(4, 26, 8, 30)(6, 28, 15, 17)(7, 29, 9, 21)(10, 27,

14, 24)(13, 16)

Kernel has order 1 and is generated by:

There are 1 orbits on the BLT set.

The orbit length are [30]

The orbits are:

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