1 BLT set 3 over GF(11)

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

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

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

$P_3 = (0, 1, 5, 10, 5)$

$P_4 = (0, 1, 3, 7, 9)$

$P_5 = (0, 1, 5, 3, 2)$

$P_6 = (0, 1, 3, 1, 8)$

$P_7 = (1, 6, 10, 3, 9)$

$P_8 = (1, 3, 9, 5, 1)$

$P_9 = (1, 4, 3, 10, 2)$

$P_{10} = (1, 1, 5, 5, 1)$

$P_{11} = (1, 6, 10, 1, 5)$

$P_{12} = (1, 10, 2, 7, 8)$

Stabilizer of order 144 is generated by:

$$g_1 = \begin{pmatrix} 10 & 0 & 0 & 0 & 0 \\ 0 & 6 & 8 & 5 & 8 \\ 0 & 2 & 6 & 3 & 7 \\ 0 & 7 & 8 & 4 & 8 \\ 0 & 3 & 5 & 10 & 4 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 10 & 0 & 0 & 0 & 0 \\ 0 & 7 & 10 & 5 & 8 \\ 0 & 8 & 7 & 3 & 7 \\ 0 & 7 & 8 & 4 & 8 \\ 0 & 3 & 5 & 10 & 4 \end{pmatrix}$$

$$g_3 = \begin{pmatrix} 8 & 0 & 0 & 7 & 2 \\ 0 & 10 & 0 & 0 & 0 \\ 0 & 0 & 10 & 0 & 0 \\ 1 & 0 & 0 & 1 & 10 \\ 9 & 0 & 0 & 7 & 1 \end{pmatrix}$$

$$g_4 = \begin{pmatrix} 10 & 0 & 0 & 0 & 0 \\ 0 & 10 & 0 & 0 & 0 \\ 0 & 0 & 10 & 0 & 0 \\ 0 & 0 & 0 & 0 & 2 \\ 0 & 0 & 0 & 6 & 0 \end{pmatrix}$$

$$g_5 = \begin{pmatrix} 0 & 10 & 0 & 7 & 8 \\ 0 & 10 & 0 & 0 & 0 \\ 5 & 6 & 10 & 2 & 7 \\ 4 & 7 & 0 & 6 & 1 \\ 9 & 2 & 0 & 3 & 6 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 144 and is generated by:

g_1 =(1, 3)(2, 4)(11, 12)

g_2 =(1, 4)(2, 3)(5, 6)(8, 10)(11, 12)

g_3 =(5, 10)(6, 8)(7, 9)

g_4 =(3, 5)(4, 6)(7, 11)

g_5 =(2, 12)(3, 5)(4, 7)(6, 11)(8, 9)

Kernel has order 1 and is generated by:

There are 1 orbits on the BLT set.

The orbit length are [12]

The orbits are:

$O_0 = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$ (length 12)