1 BLT set 9 over GF(23)

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

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

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

$P_3 = (0, 1, 9, 22, 9)$

$P_4 = (0, 1, 9, 12, 5)$

$P_5 = (1, 6, 12, 19, 1)$

$P_6 = (1, 14, 15, 4, 22)$

$P_7 = (1, 11, 19, 22, 3)$

$P_8 = (1, 18, 8, 7, 22)$

$P_9 = (1, 5, 15, 9, 12)$

$P_{10} = (1, 19, 20, 16, 15)$

$P_{11} = (1, 6, 3, 1, 4)$

$P_{12} = (1, 3, 16, 1, 20)$

$P_{13} = (1, 15, 10, 20, 12)$

$P_{14} = (1, 8, 8, 13, 18)$

$P_{15} = (1, 12, 4, 19, 18)$

$P_{16} = (1, 6, 1, 14, 11)$

$P_{17} = (1, 17, 20, 10, 5)$

$P_{18} = (1, 9, 8, 9, 20)$

$P_{19} = (1, 8, 13, 7, 8)$

$P_{20} = (1, 20, 7, 4, 5)$

$P_{21} = (1, 17, 11, 14, 3)$

$P_{22} = (1, 4, 3, 3, 11)$

$P_{23} = (1, 17, 22, 16, 1)$

$P_{24} = (1, 15, 15, 22, 19)$

Stabilizer of order 12144 is generated by:

$$g_1 = \begin{pmatrix} 11 & 0 & 0 & 9 & 2 \\ 0 & 22 & 0 & 0 & 0 \\ 0 & 5 & 22 & 14 & 2 \\ 1 & 2 & 0 & 18 & 14 \\ 16 & 14 & 0 & 19 & 18 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 22 & 0 & 0 & 0 & 0 \\ 0 & 0 & 9 & 0 & 0 \\ 0 & 18 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \end{pmatrix}$$

$$g_3 = \begin{pmatrix} 22 & 0 & 0 & 0 & 0 \\ 0 & 6 & 8 & 17 & 8 \\ 0 & 16 & 6 & 8 & 11 \\ 0 & 6 & 7 & 17 & 7 \\ 0 & 7 & 3 & 15 & 17 \end{pmatrix}$$

$$g_4 = \begin{pmatrix} 12 & 0 & 0 & 9 & 2 \\ 0 & 17 & 0 & 0 & 0 \\ 12 & 7 & 19 & 2 & 11 \\ 9 & 12 & 0 & 8 & 10 \\ 12 & 15 & 0 & 14 & 16 \end{pmatrix}$$

$$g_5 = \begin{pmatrix} 16 & 0 & 0 & 15 & 6 \\ 0 & 19 & 0 & 0 & 0 \\ 0 & 0 & 17 & 0 & 0 \\ 20 & 0 & 0 & 19 & 8 \\ 4 & 0 & 0 & 4 & 19 \end{pmatrix}$$

$$g_6 = \begin{pmatrix} 22 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 18 \\ 0 & 0 & 0 & 9 & 0 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 12144 and is generated by:

g_1 =(2, 4)(3, 5)(7, 8)(9, 10)(11, 12)(13, 14)(15, 16)(17, 18)(19, 20)(21, 22)(23, 24)

g_2 =(1, 2)(5, 6)(7, 12)(8, 23)(9, 16)(10, 19)(11, 24)(13, 22)(14, 17)(15, 20)(18, 21)

g_3 =(1, 3, 2, 4)(5, 10, 18, 13)(6, 22, 21, 19)(7, 11, 20, 14)(8, 9, 16, 23)(12, 17, 15, 24)

g_4 =(2, 6, 16, 20, 8, 12, 7, 21, 17, 23, 19, 14, 9, 11, 24, 10, 5, 18, 15, 22, 3, 4)

g_5 =(3, 21, 8, 19, 24, 12, 7, 11, 10, 23, 18)(4, 5, 9, 13, 14, 20, 15, 17, 22, 16, 6)

g_6 =(3, 4)(5, 21)(6, 18)(7, 15)(8, 9)(10, 22)(11, 17)(12, 20)(13, 19)(14, 24)(16, 23)

Kernel has order 1 and is generated by:

There are 1 orbits on the BLT set.

The orbit length are [24]

The orbits are:

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