1 BLT set 8 over GF(23)

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

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

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

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

$P_4 = (0, 1, 1, 15, 3)$

$P_5 = (0, 1, 16, 16, 22)$

$P_6 = (1, 10, 15, 11, 3)$

$P_7 = (1, 13, 2, 4, 22)$

$P_8 = (1, 1, 6, 19, 19)$

$P_9 = (1, 13, 16, 19, 12)$

$P_{10} = (1, 15, 20, 19, 12)$

$P_{11} = (1, 8, 12, 9, 2)$

$P_{12} = (1, 8, 16, 8, 4)$

$P_{13} = (1, 12, 18, 3, 12)$

$P_{14} = (1, 22, 20, 14, 3)$

$P_{15} = (1, 11, 11, 13, 3)$

$P_{16} = (1, 5, 22, 15, 11)$

$P_{17} = (1, 9, 9, 21, 18)$

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

$P_{19} = (1, 18, 8, 13, 3)$

$P_{20} = (1, 11, 19, 8, 14)$

$P_{21} = (1, 1, 6, 17, 5)$

$P_{22} = (1, 22, 19, 2, 9)$

$P_{23} = (1, 5, 7, 19, 9)$

$P_{24} = (1, 17, 5, 3, 2)$

Stabilizer of order 24 is generated by:

$$g_1 = \begin{pmatrix} 19 & 0 & 0 & 11 & 7 \\ 0 & 0 & 3 & 0 & 0 \\ 0 & 8 & 0 & 0 & 0 \\ 15 & 0 & 0 & 14 & 2 \\ 17 & 0 & 0 & 4 & 14 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 16 & 9 & 21 & 17 & 5 \\ 22 & 13 & 8 & 12 & 20 \\ 16 & 12 & 13 & 1 & 2 \\ 14 & 2 & 20 & 13 & 19 \\ 20 & 1 & 12 & 9 & 13 \end{pmatrix}$$

$$g_3 = \begin{pmatrix} 20 & 19 & 1 & 16 & 17 \\ 0 & 6 & 8 & 17 & 8 \\ 16 & 16 & 4 & 5 & 5 \\ 22 & 22 & 2 & 4 & 6 \\ 2 & 8 & 4 & 3 & 11 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 24 and is generated by:

g_1 =(1, 2)(3, 4)(5, 12)(6, 21)(7, 18)(8, 11)(9, 19)(10, 15)(13, 23)(14, 24)(16, 17)(20, 22)

g_2 =(1, 6)(2, 19)(3, 22)(4, 17)(5, 24)(7, 21)(8, 16)(9, 18)(10, 13)(11, 20)(12, 23)(14, 15)

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

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)