

1 BLT set 2 over GF(25)

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

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

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

$$P_3 = (0, 1, 17, 4, 17)$$

$$P_4 = (0, 1, 13, 2, 21)$$

$$P_5 = (0, 1, 13, 3, 9)$$

$$P_6 = (0, 1, 17, 1, 13)$$

$$P_7 = (0, 1, 13, 22, 14)$$

$$P_8 = (0, 1, 9, 20, 18)$$

$$P_9 = (0, 1, 17, 11, 7)$$

$$P_{10} = (0, 1, 21, 13, 3)$$

$$P_{11} = (0, 1, 9, 14, 11)$$

$$P_{12} = (0, 1, 17, 19, 23)$$

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

$$P_{14} = (0, 1, 17, 18, 10)$$

$$P_{15} = (0, 1, 21, 7, 8)$$

$$P_{16} = (0, 1, 9, 9, 4)$$

$$P_{17} = (0, 1, 21, 10, 24)$$

$$P_{18} = (0, 1, 13, 24, 5)$$

$$P_{19} = (0, 1, 21, 23, 22)$$

$$P_{20} = (0, 1, 13, 6, 20)$$

$$P_{21} = (0, 1, 21, 15, 6)$$

$$P_{22} = (0, 1, 9, 21, 1)$$

$$P_{23} = (0, 1, 9, 16, 19)$$

$$P_{24} = (0, 1, 21, 17, 2)$$

$$P_{25} = (0, 1, 17, 12, 15)$$

$$P_{26} = (0, 1, 9, 5, 12)$$

Stabilizer of order 124800 is generated by:

$$g_1 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 8 & 0 & 0 & 0 \\ 0 & 0 & 6 & 0 & 0 \\ 0 & 0 & 0 & 8 & 0 \\ 0 & 0 & 0 & 0 & 6 \end{pmatrix}, 1$$

with 36 fixed points

$$g_2 = \begin{pmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 0 & 7 & 0 & 0 \\ 0 & 16 & 18 & 14 & 18 \\ 0 & 0 & 14 & 0 & 14 \\ 0 & 0 & 6 & 23 & 0 \end{pmatrix}, 1$$

with 8 fixed points

$$g_3 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 4 & 0 & 0 & 0 \\ 0 & 0 & 4 & 0 & 0 \\ 0 & 0 & 0 & 4 & 0 \\ 0 & 0 & 0 & 0 & 4 \end{pmatrix}, 0$$

with 676 fixed points

$$g_4 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 8 & 0 & 0 & 0 \\ 0 & 0 & 6 & 0 & 0 \\ 0 & 0 & 0 & 0 & 14 \\ 0 & 0 & 0 & 23 & 0 \end{pmatrix}, 1$$

with 26 fixed points

$$g_5 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 4 & 0 & 0 & 0 \\ 0 & 20 & 4 & 10 & 2 \\ 0 & 2 & 0 & 0 & 13 \\ 0 & 10 & 0 & 5 & 0 \end{pmatrix}, 0$$

with 26 fixed points

$$g_6 = \begin{pmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 2 & 0 & 0 & 0 \\ 0 & 15 & 3 & 5 & 1 \\ 0 & 2 & 0 & 4 & 0 \\ 0 & 10 & 0 & 0 & 4 \end{pmatrix}, 0$$

with 28 fixed points

$$g_7 = \begin{pmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 3 & 0 & 0 & 0 \\ 0 & 0 & 2 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \end{pmatrix}, 0$$

with 4 fixed points

$$g_8 = \begin{pmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 8 & 0 & 0 & 0 \\ 0 & 0 & 6 & 0 & 0 \\ 0 & 0 & 0 & 2 & 0 \\ 0 & 0 & 0 & 0 & 3 \end{pmatrix}, 1$$

with 36 fixed points

$$g_9 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 7 & 0 & 0 & 0 \\ 0 & 0 & 16 & 0 & 0 \\ 0 & 0 & 0 & 8 & 0 \\ 0 & 0 & 0 & 0 & 6 \end{pmatrix}, 0$$

with 4 fixed points The induced group has order 31200 and is generated by:

$$g_1 = (3)(2)(4)(6)(5)(1)(7, 20)(13, 18)(12, 25)(11, 23)(10, 21)(9, 14)(15, 19)(17, 24)(22, 26)(8, 16)$$

$$g_2 = (6)(5)(10, 23, 21, 11)(8, 18, 9, 22)(19, 20, 24, 25)(13, 14, 26, 16)(7, 17, 12, 15)(1, 2, 3, 4)$$

$$g_3 = (2)(3)(4)(5)(6)(7)(8)(9)(10)(11)(12)(13)(14)(15)(16)(17)(18)(19)(20)(21)(22)(23)(24)(25)(26)(1)$$

$$g_4 = (2)(3)(4)(5)(6)(7)(8)(9)(10)(11)(12)(13)(14)(15)(16)(17)(18)(19)(20)(21)(22)(23)(24)(25)(26)(1)$$

$$g_5 = (8)(1)(20)(16)(7)(6)(9, 15)(17, 23)(3, 4)(14, 19)(12, 26)(11, 24)(18, 21)(22, 25)(10, 13)(2, 5)$$

$$g_6 = (6)(1)(11, 12, 17, 22)(9, 18, 19, 10)(23, 25, 24, 26)(13, 15, 21, 14)(7, 16, 20, 8)(2, 4, 5, 3)$$

$$g_7 = (2)(1)(3, 5, 6, 4)(8, 21, 26, 17)(10, 22, 24, 16)(11, 19, 23, 15)(14, 20, 25, 18)(7, 12, 13, 9)$$

$$g_8 = (8)(2)(26)(17)(21)(1)(19, 24)(6, 12)(3, 9)(16, 23)(14, 25)(18, 20)(5, 7)(11, 22)(10, 15)(4, 13)$$

$$g_9 = (2)(1)(3, 10, 18, 11, 9, 21, 4, 16, 25, 15, 13, 8, 6, 24, 20, 23, 12, 17, 5, 22, 14, 19, 7, 26)$$

Kernel has order 4 and is generated by:

$$b_1 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 4 & 0 & 0 & 0 \\ 0 & 0 & 4 & 0 & 0 \\ 0 & 0 & 0 & 4 & 0 \\ 0 & 0 & 0 & 0 & 4 \end{pmatrix}, 0$$

$$b_2 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 22 & 0 & 0 & 0 \\ 0 & 0 & 24 & 0 & 0 \\ 0 & 0 & 0 & 0 & 16 \\ 0 & 0 & 0 & 7 & 0 \end{pmatrix}, 1$$

The kernel has 4251 orbits on the quadric.

The orbit length are $[4^{3900}, 2^{325}, 1^{26}]$

There are 1 orbits on the BLT set.

The orbit length are [26]

The orbits are:

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