1 BLT set 3 over GF(49)

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

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

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

$P_3 = (0, 1, 37, 6, 37)$

$P_4 = (0, 1, 25, 3, 43)$

$P_5 = (0, 1, 43, 2, 31)$

$P_6 = (1, 34, 45, 46, 25)$

$P_7 = (1, 12, 26, 46, 25)$

$P_8 = (1, 22, 11, 2, 44)$

$P_9 = (1, 39, 30, 19, 40)$

$P_{10} = (1, 39, 41, 41, 6)$

$P_{11} = (0, 1, 43, 5, 25)$

$P_{12} = (1, 12, 30, 41, 6)$

$P_{13} = (1, 39, 15, 46, 25)$

$P_{14} = (1, 17, 41, 46, 25)$

$P_{15} = (1, 44, 30, 46, 25)$

$P_{16} = (1, 22, 11, 46, 25)$

$P_{17} = (1, 12, 26, 2, 44)$

$P_{18} = (1, 44, 41, 24, 10)$

$P_{19} = (1, 44, 11, 29, 29)$

$P_{20} = (1, 22, 45, 7, 14)$

$P_{21} = (1, 22, 15, 19, 40)$

$P_{22} = (1, 17, 41, 2, 44)$

$P_{23} = (1, 44, 11, 19, 40)$

$P_{24} = (1, 39, 45, 24, 10)$

$P_{25} = (1, 17, 15, 41, 6)$

$P_{26} = (1, 39, 30, 29, 29)$

$P_{27} = (1, 44, 26, 7, 14)$

$P_{28} = (1, 22, 45, 41, 6)$

$P_{29} = (1, 17, 15, 7, 14)$

$P_{30} = (1, 34, 30, 24, 10)$

$P_{31} = (1, 17, 26, 19, 40)$

$P_{32} = (1, 34, 41, 29, 29)$

$P_{33} = (1, 34, 45, 2, 44)$

$P_{34} = (1, 22, 15, 29, 29)$

$P_{35} = (1, 22, 26, 24, 10)$

$P_{36} = (1, 39, 41, 7, 14)$

$P_{37} = (1, 34, 11, 41, 6)$

$P_{38} = (1, 39, 15, 2, 44)$

$P_{39} = (1, 12, 30, 7, 14)$

$P_{40} = (0, 1, 25, 4, 13)$

$P_{41} = (1, 17, 26, 29, 29)$

$P_{42} = (1, 17, 11, 24, 10)$

$P_{43} = (1, 12, 45, 19, 40)$

$P_{44} = (1, 44, 30, 2, 44)$

$P_{45} = (0, 1, 37, 1, 19)$

$P_{46} = (1, 44, 26, 41, 6)$

$P_{47} = (1, 34, 41, 19, 40)$

$P_{48} = (1, 34, 11, 7, 14)$

$P_{49} = (1, 12, 45, 29, 29)$

$P_{50} = (1, 12, 15, 24, 10)$

Stabilizer of order 940800 is generated by:

$$g_1 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 6 & 13 & 5 & 25 \\ 0 & 0 & 6 & 0 & 0 \\ 0 & 0 & 25 & 1 & 0 \\ 0 & 0 & 5 & 0 & 1 \end{pmatrix}, 0$$

with 52 fixed points

$$g_2 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 6 & 0 & 0 & 0 \\ 0 & 14 & 6 & 28 & 4 \\ 0 & 4 & 0 & 1 & 0 \\ 0 & 28 & 0 & 0 & 1 \end{pmatrix}, 0$$

with 52 fixed points

$$g_3 = \begin{pmatrix} 11 & 0 & 0 & 6 & 19 \\ 0 & 6 & 0 & 0 & 0 \\ 0 & 0 & 6 & 0 & 0 \\ 13 & 0 & 0 & 22 & 22 \\ 3 & 0 & 0 & 16 & 22 \end{pmatrix}, 0$$

with 2402 fixed points

$$g_4 = \begin{pmatrix} 40 & 0 & 0 & 11 & 22 \\ 0 & 17 & 0 & 0 & 0 \\ 0 & 0 & 16 & 0 & 0 \\ 18 & 0 & 0 & 8 & 13 \\ 13 & 0 & 0 & 25 & 19 \end{pmatrix}, 1$$

with 64 fixed points

$$g_5 = \begin{pmatrix} 40 & 0 & 0 & 11 & 22 \\ 0 & 34 & 46 & 22 & 46 \\ 0 & 33 & 16 & 10 & 48 \\ 18 & 34 & 20 & 20 & 26 \\ 13 & 23 & 8 & 15 & 27 \end{pmatrix}, 1$$

with 2 fixed points

$$g_6 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 4 & 0 & 0 & 0 \\ 0 & 35 & 2 & 14 & 2 \\ 0 & 6 & 0 & 1 & 0 \\ 0 & 42 & 0 & 0 & 1 \end{pmatrix}, 0$$

with 52 fixed points

$$g_7 = \begin{pmatrix} 6 & 0 & 0 & 0 & 0 \\ 0 & 3 & 0 & 0 & 0 \\ 0 & 0 & 5 & 0 & 0 \\ 0 & 0 & 0 & 6 & 0 \\ 0 & 0 & 0 & 0 & 6 \end{pmatrix}, 0$$

with 52 fixed points

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

with 52 fixed points

$$g_9 = \begin{pmatrix} 8 & 0 & 0 & 28 & 38 \\ 0 & 33 & 0 & 0 & 0 \\ 0 & 0 & 36 & 0 & 0 \\ 47 & 0 & 0 & 27 & 18 \\ 14 & 0 & 0 & 46 & 27 \end{pmatrix}, 0$$

with 4 fixed points

$$g_{10} = \begin{pmatrix} 1 & 0 & 0 & 24 & 0 \\ 0 & 37 & 0 & 0 & 0 \\ 0 & 0 & 42 & 0 & 0 \\ 0 & 0 & 0 & 41 & 0 \\ 17 & 0 & 0 & 6 & 18 \end{pmatrix}, 1$$

with 10 fixed points The induced group has order 235200 and is generated by:

g_1 =(1, 5)(3, 4)(6, 28)(7, 19)(8, 48)(9, 14)(10, 31)(11, 40)(12, 18)(13, 42)(15, 39)(16, 33)(17, 46)(20, 47)(21, 30)(22, 24)(23, 49)(25, 36)(26, 29)(27, 50)(32, 35)(34, 37)(38, 41)(43, 44)

g_2 =(2, 5)(3, 4)(6, 8)(7, 30)(9, 46)(10, 38)(11, 45)(12, 27)(13, 32)(14, 29)(15, 31)(16, 28)(17, 26)(18, 25)(19, 24)(20, 23)(21, 22)(33, 48)(34, 47)(35, 44)(36, 50)(37, 49)(39, 41)(42, 43)

g_3 =(6, 8)(7, 44)(9, 41)(10, 29)(12, 27)(13, 22)(14, 38)(15, 17)(16, 33)(18, 50)(19, 43)(20, 37)(21, 32)(23, 49)(24, 42)(25, 36)(26, 31)(28, 48)(30, 35)(34, 47)(39, 46)

g_4 =(6, 8)(7, 44)(9, 41)(10, 29)(12, 27)(13, 22)(14, 38)(15, 17)(16, 33)(18, 50)(19, 43)(20, 37)(21, 32)(23, 49)(24, 42)(25, 36)(26, 31)(28, 48)(30, 35)(34, 47)(39, 46)

g_5 =(1, 3, 2, 5, 45, 40)(6, 13, 10, 32, 34, 28)(7, 42, 15, 25, 39, 37)(8, 22, 29, 21, 47, 48)(9, 19, 12, 41, 43, 27)(14, 18, 35, 16, 23, 31)(17, 36, 46, 20, 44, 24)(26, 38, 50, 30, 33, 49)

g_6 =(2, 3, 40)(5, 45, 11)(6, 18, 41)(7, 20, 10)(8, 50, 9)(12, 42, 13)(14, 17, 43)(15, 19, 38)(16, 21, 39)(22, 27, 24)(23, 25, 26)(28, 47, 35)(29, 44, 37)(30, 48, 34)(31, 49, 36)(32, 46, 33)

g_7 =(3, 11, 4)(5, 40, 45)(6, 14, 7)(8, 38, 44)(9, 23, 21)(10, 46, 28)(12, 37, 25)(13, 15, 16)(17, 33, 22)(18, 35, 24)(19, 34, 26)(20, 36, 27)(29, 39, 48)(30, 42, 50)(31, 43, 47)(32, 41, 49)

g_8 =(3, 40, 11, 45, 4, 5)(6, 15, 14, 16, 7, 13)(8, 17, 38, 33, 44, 22)(9, 47, 23, 31, 21, 43)(10, 37, 46, 25, 28, 12)(18, 42, 35, 50, 24, 30)(19, 41, 34, 49, 26, 32)(20, 39, 36, 48, 27, 29)

g_9 =(3, 16, 40, 7, 11, 13, 45, 6, 4, 15, 5, 14)(8, 10, 17, 37, 38, 46, 33, 25, 44, 28, 22, 12)(9, 29, 47, 20, 23, 39, 31, 36, 21, 48, 43, 27)(18, 19, 42, 41, 35, 34, 50, 49, 24, 26, 30, 32)

g_{10} =(3, 9, 40, 47, 11, 23, 45, 31, 4, 21, 5, 43)(6, 25, 15, 28, 14, 12, 16, 10, 7, 37, 13, 46)(8, 30, 17, 18, 38, 42, 33, 35, 44, 50, 22, 24)(19, 27, 41, 29, 34, 20, 49, 39, 26, 36, 32, 48)

Kernel has order 4 and is generated by:

$$b_1 = \begin{pmatrix} 45 & 0 & 0 & 1 & 37 \\ 0 & 6 & 0 & 0 & 0 \\ 0 & 0 & 6 & 0 & 0 \\ 43 & 0 & 0 & 33 & 15 \\ 4 & 0 & 0 & 33 & 33 \end{pmatrix}, 0$$

$$b_2 = \begin{pmatrix} 6 & 0 & 0 & 0 & 0 \\ 0 & 6 & 0 & 0 & 0 \\ 0 & 0 & 6 & 0 & 0 \\ 0 & 0 & 0 & 6 & 0 \\ 0 & 0 & 0 & 0 & 6 \end{pmatrix}, 0$$

$$b_3 = \begin{pmatrix} 16 & 0 & 0 & 45 & 34 \\ 0 & 17 & 0 & 0 & 0 \\ 0 & 0 & 16 & 0 & 0 \\ 38 & 0 & 0 & 9 & 27 \\ 43 & 0 & 0 & 18 & 4 \end{pmatrix}, 1$$

The kernel has 30675 orbits on the quadric.

The orbit length are $[4^{29400}, 2^{1225}, 1^{50}]$

There are 1 orbits on the BLT set.

The orbit length are [50]

The orbits are:

$O_0 = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34,$

(length 50)