

1 BLT set 8 over GF(29)

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

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

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

$$P_3 = (0, 1, 14, 28, 14)$$

$$P_4 = (0, 1, 8, 19, 24)$$

$$P_5 = (0, 1, 21, 16, 15)$$

$$P_6 = (1, 10, 6, 26, 1)$$

$$P_7 = (1, 18, 7, 7, 15)$$

$$P_8 = (1, 12, 28, 22, 15)$$

$$P_9 = (1, 15, 9, 2, 19)$$

$$P_{10} = (1, 7, 17, 19, 12)$$

$$P_{11} = (1, 19, 28, 25, 10)$$

$$P_{12} = (1, 4, 19, 21, 6)$$

$$P_{13} = (1, 12, 22, 12, 19)$$

$$P_{14} = (1, 7, 26, 27, 19)$$

$$P_{15} = (1, 22, 10, 19, 25)$$

$$P_{16} = (1, 2, 9, 12, 25)$$

$$P_{17} = (1, 26, 6, 20, 11)$$

$$P_{18} = (1, 3, 23, 11, 20)$$

$$P_{19} = (1, 24, 3, 25, 11)$$

$$P_{20} = (1, 18, 7, 16, 12)$$

$$P_{21} = (1, 13, 18, 1, 26)$$

$$P_{22} = (1, 12, 25, 23, 26)$$

$$P_{23} = (1, 20, 8, 14, 3)$$

$$P_{24} = (1, 27, 7, 9, 24)$$

$$P_{25} = (1, 19, 28, 24, 8)$$

$$P_{26} = (1, 5, 14, 7, 23)$$

$$P_{27} = (1, 1, 26, 22, 8)$$

$$P_{28} = (1, 3, 28, 21, 7)$$

$$P_{29} = (1, 15, 5, 27, 9)$$

$$P_{30} = (1, 19, 24, 8, 19)$$

Stabilizer of order 60 is generated by:

$$g_1 = \begin{pmatrix} 27 & 0 & 0 & 8 & 25 \\ 0 & 0 & 5 & 0 & 0 \\ 0 & 6 & 0 & 0 & 0 \\ 27 & 0 & 0 & 15 & 21 \\ 4 & 0 & 0 & 26 & 15 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 15 & 0 & 9 & 3 & 22 \\ 19 & 23 & 17 & 14 & 25 \\ 0 & 12 & 23 & 17 & 23 \\ 11 & 23 & 25 & 27 & 0 \\ 16 & 17 & 14 & 15 & 27 \end{pmatrix}$$

$$g_3 = \begin{pmatrix} 15 & 20 & 0 & 21 & 28 \\ 0 & 28 & 0 & 0 & 0 \\ 10 & 10 & 28 & 17 & 22 \\ 14 & 22 & 0 & 22 & 28 \\ 25 & 17 & 0 & 23 & 22 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 60 and is generated by:

$$g_1 = (1, 2)(3, 4)(5, 30)(6, 25)(7, 17)(8, 22)(9, 11)(10, 23)(12, 28)(13, 24)(14, 16)(15, 27)(18, 20)(19, 26)(21, 29)$$

$$g_2 = (1, 20)(2, 3)(4, 8)(6, 15)(7, 24)(9, 12)(10, 25)(13, 23)(14, 19)(16, 17)(18, 29)(21, 26)(22, 28)(27, 30)$$

$$g_3 = (2, 27)(3, 18)(4, 6)(5, 20)(7, 11)(8, 21)(9, 16)(10, 22)(12, 13)(14, 25)(15, 26)(17, 23)(19, 28)(29, 30)$$

Kernel has order 1 and is generated by:

There are 1 orbits on the BLT set.

The orbit length are [30]

The orbits are:

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