1 BLT set 4 over GF(17)

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

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

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

$P_3 = (0, 1, 11, 16, 11)$

$P_4 = (0, 1, 7, 8, 14)$

$P_5 = (0, 1, 14, 14, 16)$

$P_6 = (1, 12, 15, 6, 1)$

$P_7 = (1, 12, 15, 3, 2)$

$P_8 = (1, 4, 5, 8, 8)$

$P_9 = (1, 4, 5, 7, 14)$

$P_{10} = (1, 11, 1, 10, 9)$

$P_{11} = (1, 12, 15, 10, 4)$

$P_{12} = (1, 12, 15, 12, 9)$

$P_{13} = (1, 15, 3, 10, 9)$

$P_{14} = (1, 16, 6, 10, 9)$

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

$P_{16} = (1, 12, 8, 13, 3)$

$P_{17} = (1, 3, 15, 9, 10)$

$P_{18} = (1, 12, 8, 9, 10)$

Stabilizer of order 24 is generated by:

$$g_1 = \begin{pmatrix} 16 & 0 & 0 & 0 & 0 \\ 0 & 0 & 3 & 0 & 0 \\ 0 & 6 & 0 & 0 & 0 \\ 0 & 0 & 0 & 16 & 0 \\ 0 & 0 & 0 & 0 & 16 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 6 \\ 0 & 0 & 0 & 3 & 0 \end{pmatrix}$$

$$g_3 = \begin{pmatrix} 7 & 0 & 0 & 3 & 1 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 9 & 0 & 0 & 13 & 16 \\ 10 & 0 & 0 & 8 & 13 \end{pmatrix}$$

$$g_4 = \begin{pmatrix} 15 & 0 & 10 & 12 & 4 \\ 6 & 4 & 5 & 4 & 3 \\ 15 & 10 & 4 & 14 & 9 \\ 11 & 7 & 11 & 1 & 6 \\ 13 & 4 & 16 & 10 & 9 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 24 and is generated by:

g_1 =(1, 2)(3, 4)(13, 14)(15, 16)(17, 18)

g_2 =(6, 7)(8, 9)(11, 12)(15, 17)(16, 18)

g_3 =(3, 14)(4, 13)(5, 10)(6, 9)(7, 8)(11, 12)(15, 17)(16, 18)

g_4 =(1, 12, 5, 2, 11, 10)(3, 16, 7, 13, 17, 8)(4, 18, 9, 14, 15, 6)

Kernel has order 1 and is generated by:

There are 2 orbits on the BLT set.

The orbit length are $[12, 6]$

The orbits are:

$O_0 = \{1, 2, 5, 10, 11, 12\}$ (length 6)

$O_1 = \{3, 4, 6, 7, 8, 9, 13, 14, 15, 16, 17, 18\}$ (length 12)

The actions induced on the orbits are:

Induced action on orbit $O_0 = \{1, 2, 5, 10, 11, 12\}$ (length 6)

The induced group has order 24 and is generated by:

g_1 =(1, 2)

g_2 =(5, 6)

g_3 =(3, 4)(5, 6)

g_4 =(1, 6, 3, 2, 5, 4)

Kernel has order 1 and is generated by:

Induced action on orbit $O_1 = \{3, 4, 6, 7, 8, 9, 13, 14, 15, 16, 17, 18\}$ (length 12)

The induced group has order 24 and is generated by:

g_1 =(1, 2)(7, 8)(9, 10)(11, 12)

g_2 =(3, 4)(5, 6)(9, 11)(10, 12)

g_3 =(1, 8)(2, 7)(3, 6)(4, 5)(9, 11)(10, 12)

g_4 =(1, 10, 4, 7, 11, 5)(2, 12, 6, 8, 9, 3)

Kernel has order 1 and is generated by: