

Rank-65922 over GF(2)

January 15, 2021

The equation

The equation of the surface is :

$$X_0^3 + X_1^3 + X_2^3 + X_3^3 + X_0^2 X_1 + X_0^2 X_2 + X_0^2 X_3 + X_1^2 X_2 + X_0 X_1 X_2 = 0$$

(1, 1, 1, 1, 1, 1, 1, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0)

The point rank of the equation over GF(2) is 65922

General information

| | |
|----------------------------|-------|
| Number of lines | 0 |
| Number of points | 3 |
| Number of singular points | 0 |
| Number of Eckardt points | 0 |
| Number of double points | 0 |
| Number of single points | 0 |
| Number of points off lines | 3 |
| Number of Hesse planes | 0 |
| Number of axes | 0 |
| Type of points on lines | |
| Type of lines on points | 0^3 |

Singular Points

The surface has 0 singular points:

The 0 Lines

The lines and their Pluecker coordinates are:

Rank of lines: ()

Rank of points on Klein quadric: ()

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 0 Double points:

The double points on the surface are:

Single Points

The surface has 0 single points:

The single points on the surface are:

The single points on the surface are:

Points on surface but on no line

The surface has 3 points not on any line:

The points on the surface but not on lines are:

$$0 : P_{10} = (0, 1, 0, 1)$$

$$1 : P_{12} = (0, 0, 1, 1)$$

$$2 : P_{14} = (0, 1, 1, 1)$$

Line Intersection Graph

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Neighbor sets in the line intersection graph:

The surface has 3 points:

The points on the surface are:

$$0 : P_{10} = (0, 1, 0, 1)$$

$$1 : P_{12} = (0, 0, 1, 1)$$

$$2 : P_{14} = (0, 1, 1, 1)$$