
FEMTEGRADSFLADE

Denne flade af grad 5 har 15 singulariteter, som er af typen almindelig spids eller A_2 .

Som man kan se på billedet, ser 5 af singulariteterne anderledes ud end resten. Disse fem singulariteter er mere præcist af typen A_2^{++} , mens de andre er af typen A_2^{+-} .

Den første kan beskrives lokalt med ligningen $x^3+y^2+z^2=0$, den anden af $x^3+y^2-z^2=0$.

This surface of degree 5 (quintic) has 15 singularities whose type is called ordinary cusp or A_2 .

As one can see from the picture, five of the singularities look different than the others. These five singularities are more specifically of type A_2^{++} and the others of type A_2^{+-} .

The former can be described locally by the equation $x^3+y^2+z^2=0$, the others by $x^3+y^2-z^2=0$.

Billede: Oliver Labs

NB: Denne del bortskæres

SYVENDEGRADSFLADE

I 2004 konstruerede Oliver Labs en flade af grad 7 med 99 singulariteter. Siden 1997 har man vidst, at for en flade af grad 6 er det størst mulige antal singulariteter 65.

I 1982 opdagede A.N. Varchenko at en flade af grad syv højest kan have 104 singulariteter. I 1992, konstruerede Chmutov en syvendegradsflade med 93 singulariteter, hvilket var verdensrekorden på det tidspunkt. Siden Labs' konstruktion har verdensrekorden været 99. Det er et uløst problem, om flader af grad 7 kan have 100, 101, 102, 103, eller 104 singulariteter.

In 2004, Oliver Labs constructed a surface of degree 7 (septic) with 99 singularities. Since 1997 it was known that for surfaces of degree 6 that the maximum possible number of singularities is 65.

In 1982, A.N.Varchenko discovered that in degree 7 there cannot be more than 104 singularities. In 1992, Chmutov constructed a septic with 93 singularities which was the world record at that time. Since Labs' construction, this world record has been 99. It is an open question whether septics can have 100, 101, . . . , 104 singularities!

Billede: Oliver Labs

NB: Denne del bortskæres

SJETTEGRADSFLADE

Denne flade af grad 6 blev konstrueret af Wolf Barth i 1996. Fladen har i alt 65 singulariteter, hvis vi medregner 15 usynlige singulariteter, som er uendeligt langt væk.

Barths konstruktion var en stor overraskelse, for indtil da troede matematikerne, at en flade af grad 6 højst kunne have 64 singulariteter.

This surface of degree 6 (sextic) was constructed by Wolf Barth in 1996. Altogether, it has 65 singularities if we include the 15 invisible ones which are infinitely far away.

Barth's construction was a big surprise because until then geometers believed that a surface of degree 6 cannot have more than 64 singularities.

Billede: Oliver Labs



NB: Denne del bortskæres