

# Surfaces with many real Singularities

As already mentioned, the exact maximum possible number  $\mu(7)$  of singularities on a surface of degree 7 is not known. We only have an upper and a lower bound:  
 $99 \leq \mu(7) \leq 104$ .

Thus, it is not very astonishing that even less is known for a general degree  $d$ .

At least, Sonja Breske, Oliver Labs and Duco van Straten where able to adapt a construction by S.V. Chmutov such that the current maximum number of singularities is also attained by surfaces with real singularities. Up to now we know:

$$0,41\bar{6}d^3 \lesssim \mu(d) \lesssim 0.44\bar{4}d^3.$$

From above, one can see the symmetry of the construction and a relation to the maximum number of black cells in an arrangement of lines:

