

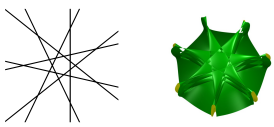
A 7-gon-symmetric Septic

This surface which looks like a star has degree 7. Until recently its number of singularities, 84, was still the maximum number of real singularities known for septic; only in 2004, Oliver Labs improved this world record to 99.

The three cushions which one can see in the interactive picture, are caused by the use of Chebychev polynomials, similar to the Chmutov Octic. In fact, this star shaped surface is another variant of Chmutov's surfaces. Here, the plane curve $T_d(x) + T_d(y)$ was replaced by a regular 7-gon $S_7(x, y)$:

$$S_7(x, y) + \lambda \cdot T_d(z) = 0,$$

for a suitably chosen $\lambda \in \mathbb{R}$.



This variant of Chmutov's construction is provided by Duco van Straten.