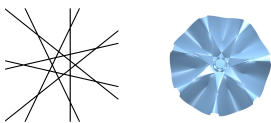


# A Septic with 99 Singularities

Oliver Labs constructed a surface of degree 7 (septic) while working on his dissertation at Mainz University in 2004. This is the current world record of degree 7; but it may still exist a septic with up to 104 singularities! Labs's surface has the symmetry of a regular 7-gon (left picture). This is visible when looking at the surface from the top (right picture):



For constructing this surface, Oliver Labs used the computer algebra system SINGULAR (Kaiserslautern University.) which is well suited for computations in algebraic geometry and singularities.

He used the fact that one can compute with finite sets of numbers in a natural way. We know this from the clock;  $24.00=0.00$ ,  $24.00 + 1$  hour is not 25.00, but 1.00.