

Commutative Algebra & Algebraic Geometry
SS 2010

- (1) What can computer algebra systems like Maple or Mathematica do on algebraic curves and surfaces?
- implicitize
 - parametrize
 - genus
 - Puiseux expansion
 - singularities
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- (2) Consider the system of algebraic equations

$$y^2 = x^3, \quad z = x^2, \quad xz = y^2 .$$

Visualize the set of solutions.

- (3) Is the set of solutions (over the reals R) of the system in (2) a finite set of points, a curve, a surface ? How can you determine this?