

Sudoku, algebraic geometry and computer algebra

Gerhard Pfister

Department of Mathematics
University of Kaiserslautern

2PM WEDNESDAY, OCTOBER 18

The idea of a Sudoku goes back to Leonard Euler. He called it Latin squares. In our days it was reinvented by Howard Garns (USA) and called Number place. It came to Japan and became famous under the name Sudoku. We want to solve a Sudoku using algebraic geometry and computer algebra. The idea is to associate to the places in a Sudoku the variables x_1, \dots, x_{81} and describe the sudoku as the zeroset of about 1000 polynomials in these variables. With the help of computer algebra we can solve the polynomial equations to obtain the solution of the sudoku.

ABDUS SALAM SCHOOL OF MATHEMATICAL
SCIENCES, LAHORE, PAKISTAN