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Sudoku: A Four Dimensional Wonder

Mathematical structure behind the world famous Sudoku puzzle is abundant. Through a coordinatization of the 9 by 9 grid, it is possible to use error-correcting codes to build Sudoku solutions, as well as special Sudoku puzzles with additional constraints (symmetric Sudokus). Interestingly, affine and projective geometries play a significant role in constructing orthogonal sets of Sudoku squares. We will explore these beautiful constructions and examine new results applying extensions of these geometric ideas to higher dimensional structures.