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Discipline: Mathematics

Subdiscipline: College Algebra

Areas of Research: Differential Equations, Algorithms, Special Functions

Skills: Symbolic Computation, Developing Algorithms

Research summary (current, performed in the past 5 years; 300 words or less):

Differential Equations which are solvable in terms of special functions; Bessel, Kummer, Liouvillian, Hypergeometric etc. are very common in Physics, Engineering, and Combinatorics. I am working on Hypergeometric solutions of differential equations. “Second order differential equations generated from convergent integer sequences are found to have Hypergeometric solutions”. I am focused on second order differential equations so as to establish this statement as a conjecture.

Keywords (5 max.):

Hypergeometric functions, Closed form solutions, Belyi maps, Dessin D’enfents, Permutations