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Some exact finite difference schemes.

I would like to present many exact finite difference schemes for ODEs (ordinary differential equations) and PDEs (partial differential equations) in this talk. The exact finite difference schemes are usually presented and displayed in the form that is corresponding to the associated differential equations in order to provide the close link and relation between differential equations and difference equations; this helps to provide the insight into the construction of better finite difference schemes for more general differential equations. The majority of the examples provided in this talk are NSFD (nonstandard finite difference) schemes and therefore, I will demonstrate and highlight the values and insights of Mickens's NSFD schemes. (Received January 13, 2014)