Finite Difference Equations with the Interval Parameters

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The Finite Difference Method is one of the most general approaches for solution of partial differential equations (PDE). In many situations parameters of the equations are uncertain. There are many definitions of the solution set. In this presentation the united solution set will be applied. The interval solution will be calculated by using adaptive approximation method. Both explicate and implicate finite difference method will be discussed. In order to speed up the calculations special domain specific language (DSL) will be applied. Several numerical examples and applications to structural mechanics will be presented.