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(54) Title: METHOD AND SYSTEM FOR GENERATING SOFTWARE CODE USING A SYMBOLIC LANGUAGE TRANSLATOR

(57) Abstract: An improved method and system are disclosed for creating on a computer a native operators and test code file for a finite element simulator to model fluid flow in porous media. The method of the present invention includes the steps of inputting into a symbolic language translator equations and parameters describing the model to be created by the simulator and generating one or more model objects from the equations and parameters. The method of the present invention further includes the steps of generating a symbolic representation of the residual and tangent matrix operators of the model objects and generating optimization rules for any geometric invariant quantities. Numeric core code and data structure initializing core code are generated for the the simulator in a high level programming language from the language of the symbolic language translator. The numeric core code is formatted and optimized. The present invention generates the native operators and test code file by processing the splice file through the symbolic language translator.