`$table_model()`

Requirements for data based modeling in Verilog-AMS LRM 2.3

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Outline

- **Requirements**
  - **Input data format**
  - **Interpolation**
  - **Other features**

Input data format

- **No limit of the number of input points**

- **No limit on the dimensionality of the input data**

- **No limit of the number of dependent variables.**

- **Support for both isoline style data and scattered data**

- **A mechanism to allow skipping of a column (typically an index appearing as column 1)**

Input data format

- **Support for "sections" in the input data file and section specification in the interpolation function.**

- **Encryption of all or some of the data file in the same way in which the Verilog-AMS file itself may be encrypted.**

- **Specification of variable names in the data file to support named dependent selection.**

- **Directory search guideline when a data file is specified with a relative path.**

Interpolation

- **Higher order interpolation (Cubic Splines) when data is specified as a set of isolines.**

- **Addition of local cubic interpolation that may be more useful/efficient than cubic splines.**

- **Linear interpolation only for scattered data, TBD.**

- **Support for discrete lookup, no interpolation**

- **Interpolation on a log scale for both the dependent and independent variables.**

Interpolation

- **For the isoline format, add constant extrapolation control (clamping).**

- **User defined interpolation via an analog function (mechanism similar to `$limit`).**

- **Add documentation of issues that may arise when using cubic interpolation.**

Other Requirements

- **Remove the analog operator requirement from the LRM**

- **The data file may be a string literal or a string parameter.**

- **Document the isoline data file format in more detail**

- **Support for multi-dimensional arrays**