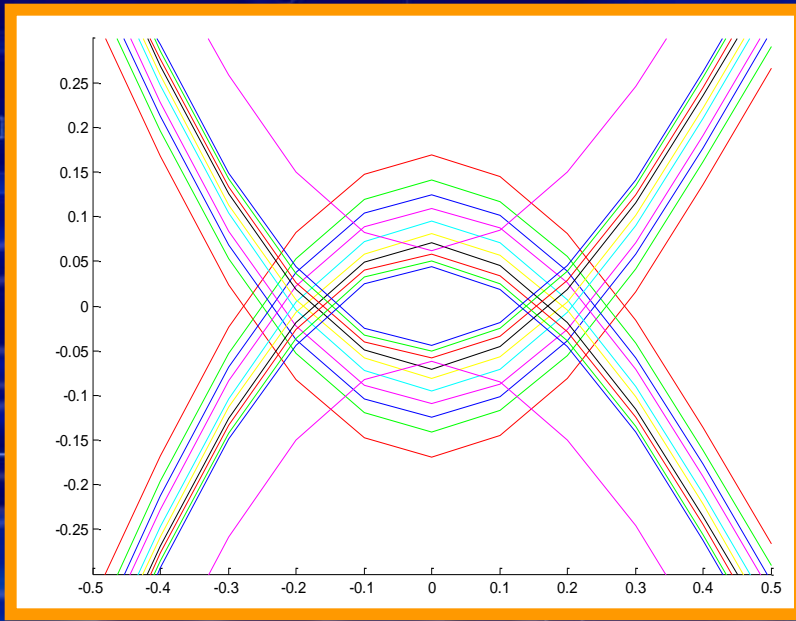


Package Modeling Decisions

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Overview of BIRD 125

- **The BIRD makes use of IBIS-ISS to describe the package**
- **IBIS-ISS replaces the R, L, C matrix or Fork/Endfork syntax**
- **The IBIS-ISS subcircuits are instantiated with a syntax similar to [External Circuit]**
- **Implicit and Explicit on-die nodes (pads) are declared so connections can be made to them for IBIS-ISS subcircuits**
- **Tries to minimize syntax changes to the IBIS specification**

- **Splits/joins in the package or on-die interconnect could be addressed using BIRD 145**
- **Sliding package model needs more work in the BIRD**
- **Stacked die modeling not addressed, need other BIRD(s)**

Overview of BIRD 145

- **The BIRD makes provisions for connecting [Model]s and [External Model]s in series**
- **This allows on-die interconnect modeling in [External Circuit] to be used with legacy [Model]s (and [External Model]s)**
- **The [Model Call] syntax allows for defining die pad names which are useful for making connections to package models**
- **Very small change to the specification, quick path to success**

- **With a little “poetic license” this BIRD could also be used for package modeling**
 - **zeroing out the normal package parameters: pin=pad**

Overview of EMD

- **The proposal introduces a brand new syntax to supersede EBD**
 - could be written with the tree or keyword style
 - replacement of path syntax with subcircuits
 - intended to model “Modules”
 - could implement package in EMD
 - not a good solution for IBIS Component packaging problem
- **The syntax is more efficient and compact than the familiar IBIS syntax**
- **The concept is based on the familiar EBD specification**
- **Since it is evolving as we speak, all of the current modeling needs are addressed**
 - sliding package modeling, etc...
- **EMD might take over the “cockpit” role from .ibs files**
 - instantiates IBIS models using “U” designators in .ibs files
 - where is the package, in .ibs, .emd, or both?
 - the definition of what “component” is may change



Decision time

- **BIRD 145 could provide a solution very quickly**
 - **could be a useful interim solution while we wait for EMD**
- **BIRD 125 is complete, but would need more work to address some needs identified recently (sliding package, stacked die)**
- **EMD needs quite a bit more detail work**
- **Is it a good idea to have both in future IBIS specifications?**
 - **the specification would get unnecessarily large**
 - **model makers might get confused on which method to use**
 - **tool vendors might implement only their favorite solution which can lead to models which only work in some tools**

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