Strong Recommendation for IBIS-ISS Models Used in Package Models:

To support both signal and power integrity applications, IBIS-ISS models used with IBIS interconnect models should NOT [contain] these case-insensitive ground reference node [names]: 0, GND, !GND, GND!, and GROUND.  These nodes [names are] interpreted as global ground in [IBIS-ISS and] many EDA tools and make power integrity analysis unreliable due to uncompensated current flow distributions.

Instead these nodes should be renamed to a new reference node name, and this reference node should be added to the IBIS-ISS node list interface so that this new reference node can be attached to an external reference.

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Comments from Bob Ross:

A script can be developed to test for embedded ground nodes in a sub-circuits and to issue a Warning that the sub-circuit is unsuitable for Signal and Power Integrity applications.  The script can also do the substitutions.  The testing portion might also might be embedded in a future IBISCHK parser.

A strong Warning is a barrier for all parties (model developers, EDA tool vendors and Users) to use ground nodes due to customer support issues. With a public script solution and public awareness, any party can understand the problem and eliminate the IBIS-ISS model Warning messages.