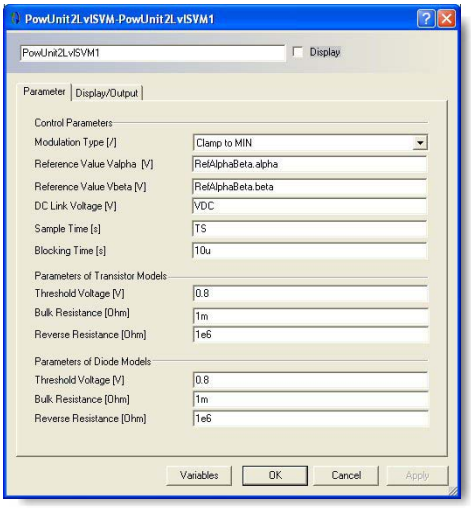
Portunus Power Electronics Library

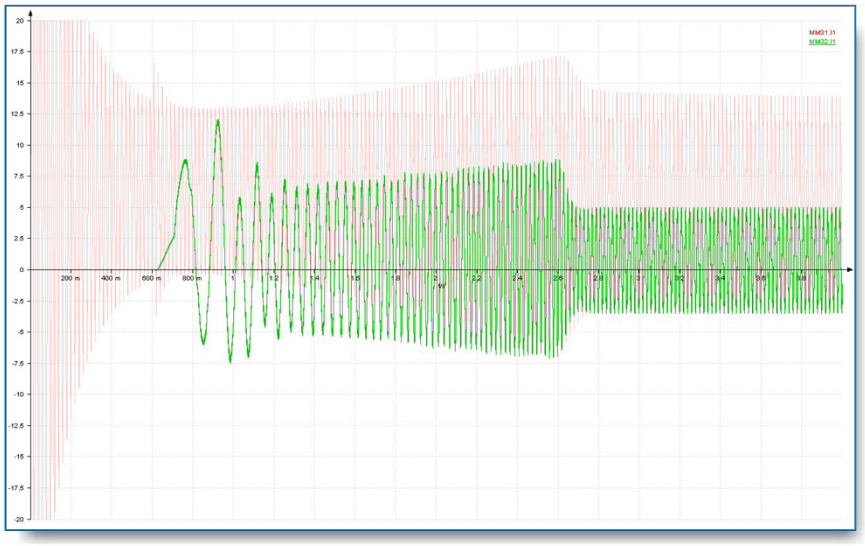
Power Electronic Models for diverse System Simulations



The majority of modern electrical and electro-mechanical systems are no longer imaginable without the integration of power electronic components. Therefore, the simulation of such systems almost always requires powerful models for the representation of the power electronics.

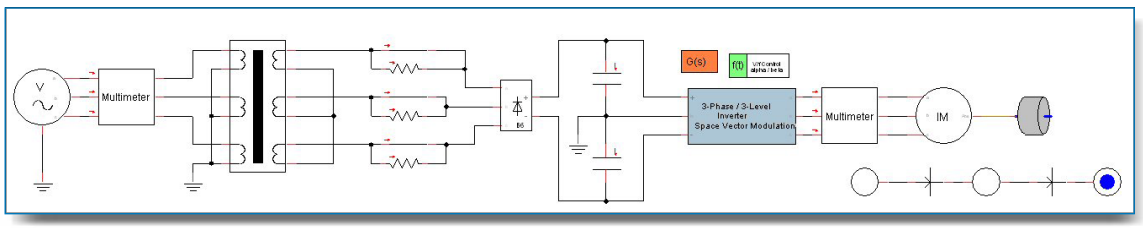
With the ***Power Electronics Library***, *Adapted Solutions* provides a comprehensive enhancement of the system simulator ***Portunus***. The library contains more than 80 models for the simulation of power electronic systems, considering all kinds of power conversion (AC/DC … DC/AC). Beside predefined network models for typical topologies, a high value is set on providing models for control algorithms as modelling of these usually requires considerable effort.

The ***Power Electronics Library*** has a modular structure. Models for the generation of control signals and the corresponding network models may be combined in the schematic or so called “units” comprising both parts can be used. Alternatively, the control algorithm models may work with user-defined networks, e.g. in order to use semiconductor models provided by the manufacturers. This flexible approach allows for the integration of higher-level control components to generate reference and release signals.



Frequently used algorithms like Park- / Clarke transformations, v-f control and sine wave sources of having variable frequency and magnitude, complete the model set. In addition, model-specific dialogues and the comfortable ***Portunus*** user interface simplify the creation of simulation models.

The switch models used in the networks, the solver employed by ***Portunus*** as well as efficient code of the control models and functional blocks, allow for short simulation time without neglecting accuracy. Quick overview of simulation results is guaranteed by the ***Portunus*** output devices with numerical and graphical display and integrated post-processing providing signal and FFT characteristics.



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