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Sommario/riassunto	<p>Grid converters increasingly affect power system operation due to the increasing share of renewable energy sources and less conventional power plants. This shift in power generation leads to converter-dominated weak grids, which show critical stability phenomena but also enable converters to contribute to grid stability and voltage support. This thesis presents critical parts of converter controls and describes models to assess their characteristics. These models are used to derive design criteria and dedicated stability analysis methods for grid converter controls.</p>