# Power Electronic Converters for Ultra High Voltage Direct Current Grids (UHVDC)

KTH Electrical Engineering

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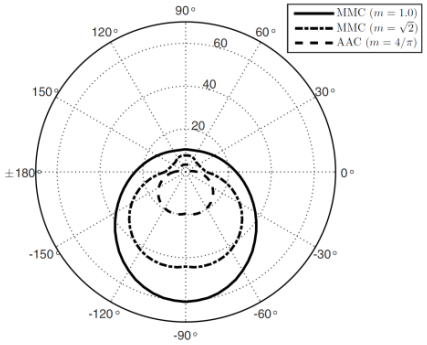
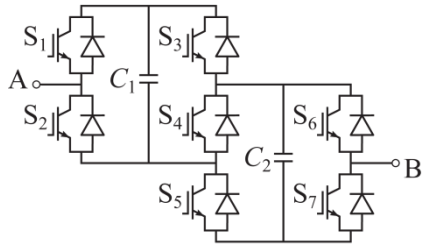



- **New Power Electronic Concepts compatible with UHVDC Grids:**
  - Review of topologies that can handle dc-side short circuits.
  - Determination of the requirements on power electronic converters compatible with UHVDC grids.
  - Loss calculations of various switching devices and converter topologies.
  - Study of energy storage requirements for different converter topologies with focus on the alternate arm converter (AAC).
  - Investigation of the semi-full-bridge (SFB) submodule.
    - Analytical studies of capacitor balancing and switching sequences.
    - Detailed switched MMC converter model in PSCAD/EMTDC.
    - Full-scale laboratory experiment.




- **Funding, Industry Contacts**
  - SweGRIDS
  - ABB

- **Main Achievements so far**
  - 2 conference publications as main author.
  - 1 conference publication as second author.