Open-Loop DC/AC Half Bridge Converter

Power Circuit

- Now have grounded midpoint on DC link
- Both switches need to be bidirectional

Gate Controls

- Updated somewhat from DC/DC case
Create sinusoidal m(t) function

\[ V_{m\_pu} + T W \cdot T W \cdot t \cdot \cos(V_{m\_pu}) \]

\[ w T I M E X w^t \]

\[ M \]

(file HalfBridgeDCAC.pl4; x-var t) t:M
AC voltage
AC voltage between the two inductors compared to ac source

![AC voltage graph](file AveragedDCAC.pl4; x-var t)

AC current

![AC current graph](file HalfBridgeDCAC.pl4; x-var t)
Zoomed current

Current in switch 1
Averaged converter model

Averaged Model

AC current

(file AveragedDCAC.pl4; x-var t) c: V A - I AC c:IACAV - IS
Zoom in on part of waveform

- Voltage at converter terminal (zoomed in)
PSCAD/EMTDC implementation