

DSP-BASED SMALL SIGNAL MODEL VALIDATION FOR A 1.5 kW THREE-PHASE THREE-LEVEL BOOST-TYPE THREE-PHASE VIENNA RECTIFIER

BY: NESRINE BEL HAJ YOUSSEF

Ph-D STUDENT, RESEARCH GROUP IN POWER ELECTRONICS AND INDUSTRIAL CONTROL (GRÉPCI)

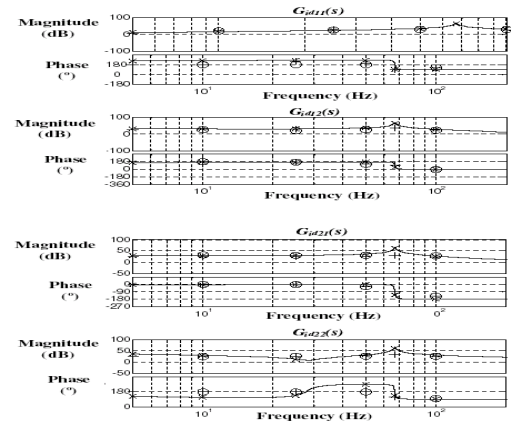


Fig. 4: 1st series of transfer functions Bode graphs: control inputs d_{dq}^* to output I_{dm} .
_: SSM, x: NAM, +: SPS, o: EXP

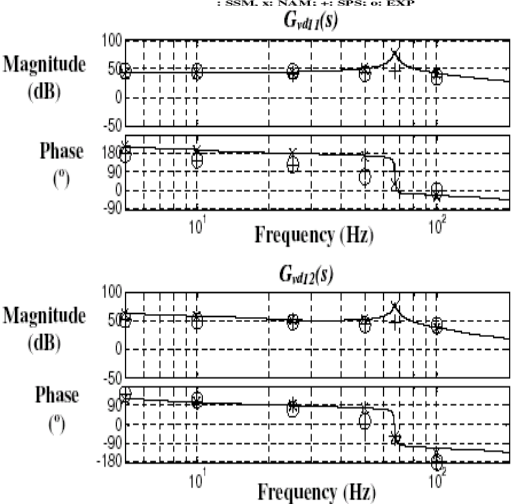


Fig. 5: 3rd series of transfer functions Bode graphs control inputs d_{dq}^* to output v_m .

_: SSM, x: NAM, +: SPS, o: EXP

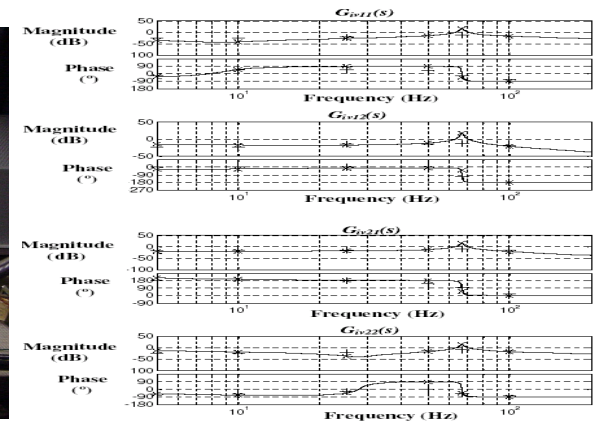
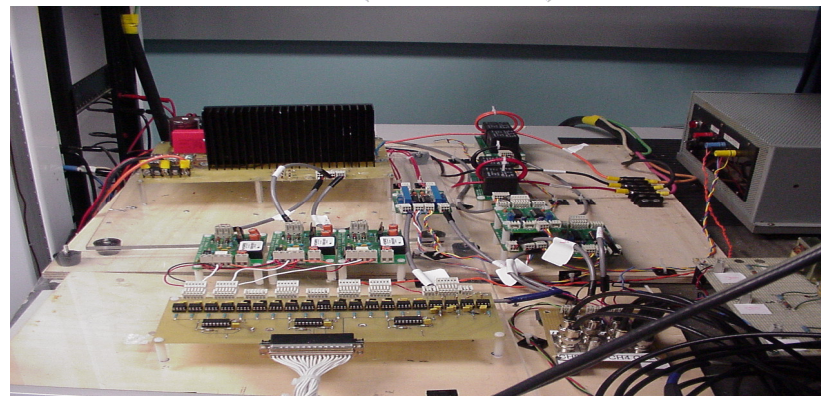


Fig. 6: 4th series of transfer functions Bode graphs disturbance inputs v_{dq} to output I_{dm} .
_: SSM, x: NAM, +: SPS

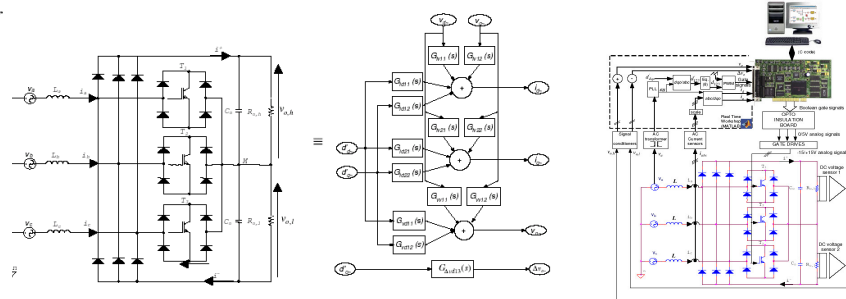


Fig. 1: Vienna converter topology and its equivalent small signal block diagram

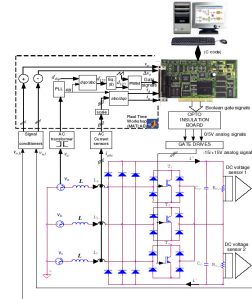


Fig. 3: Hardware used for experimental small signal model validation

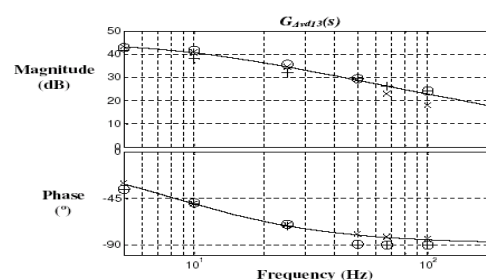


Fig. 8: 7th series of transfer functions Bode graphs control input d_m^* to output Av_m .

_: SSM, x: NAM, +: SPS, o: EXP

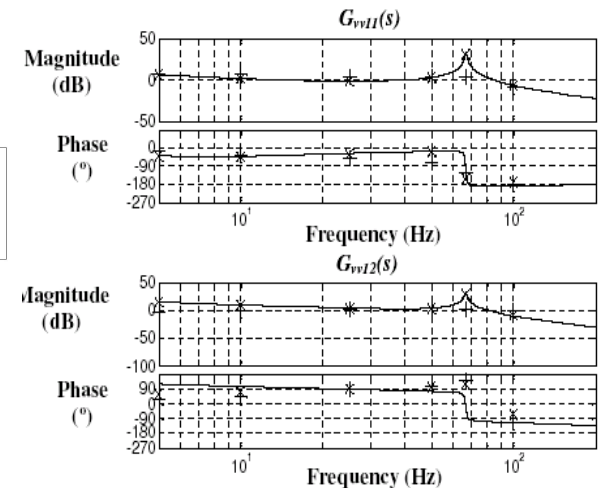


Fig. 7: 6th series of transfer functions Bode graphs disturbance inputs v_{dq} to output v_m .

_: SSM, x: NAM, +: SPS