

Electric Drives
Laboratory
DII - UniPD

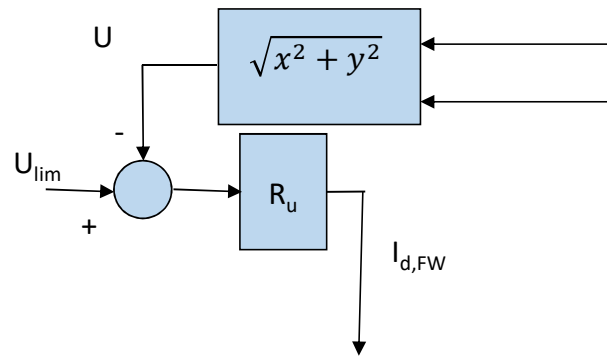
Azionamenti Elettrici

Lezioni a.a. 2018-2019

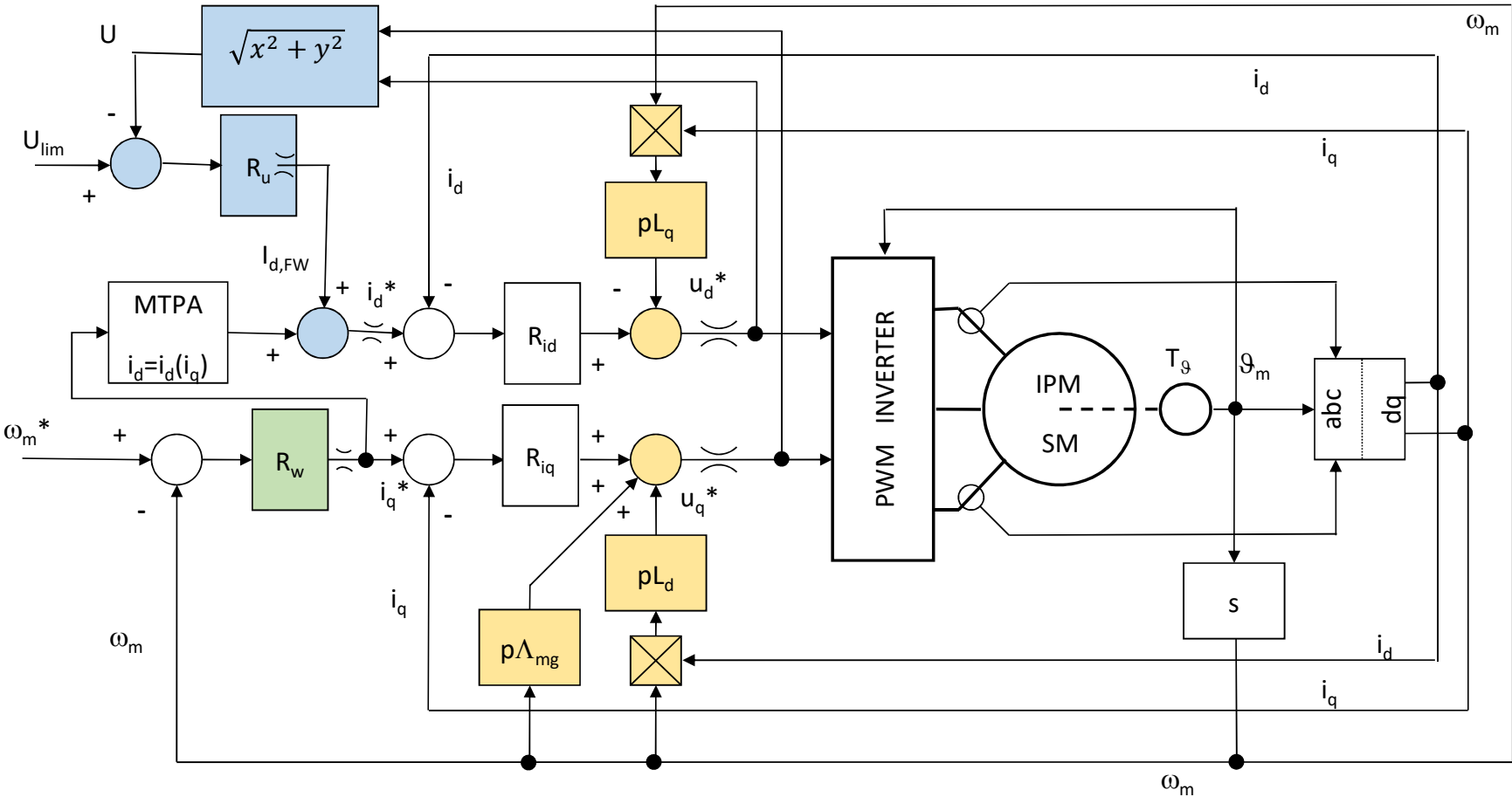
prof. Silverio Bolognani

PARTE III

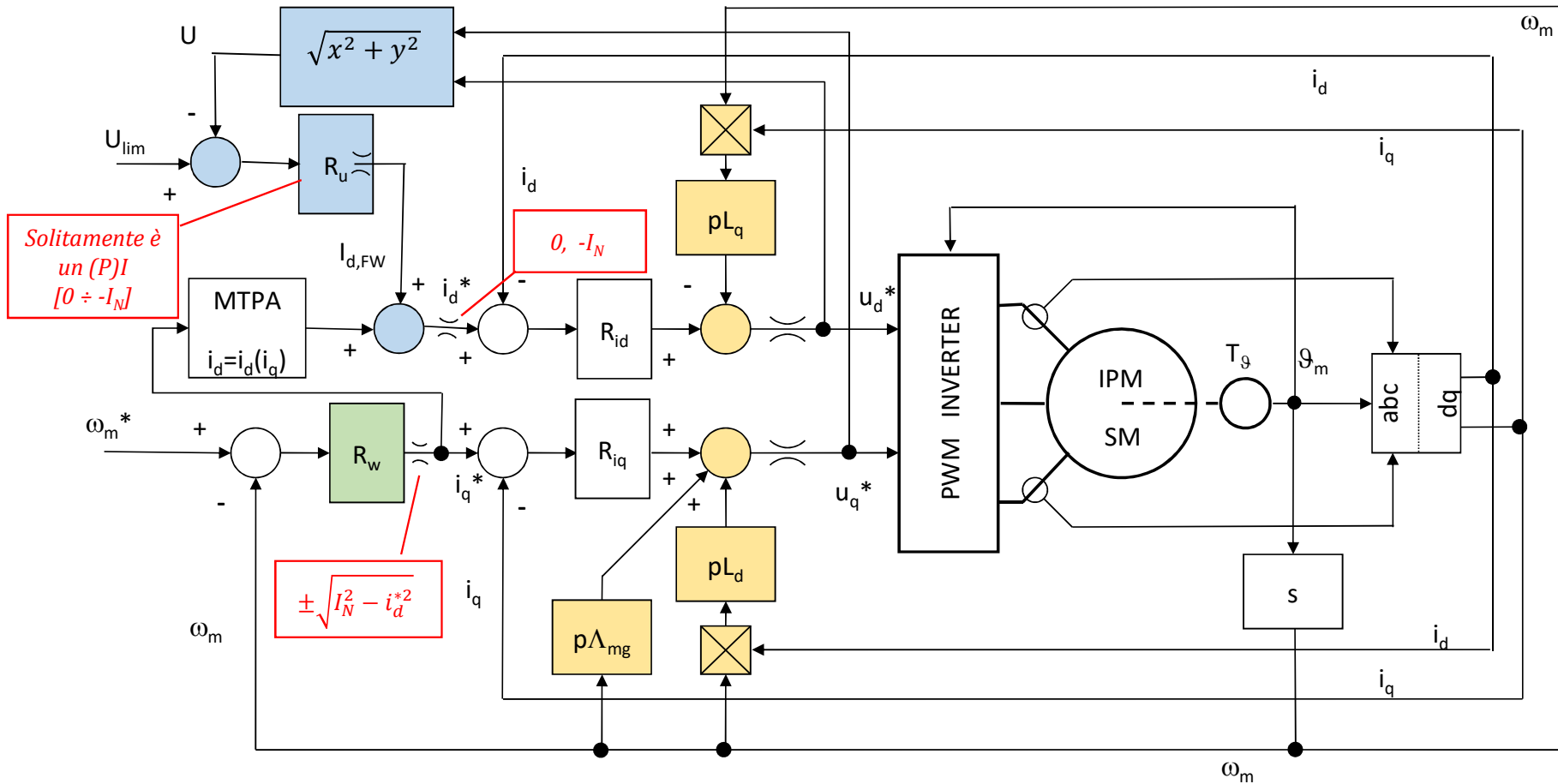
Controllo di deflussaggio in azionamenti con motore IPM e a riluttanza



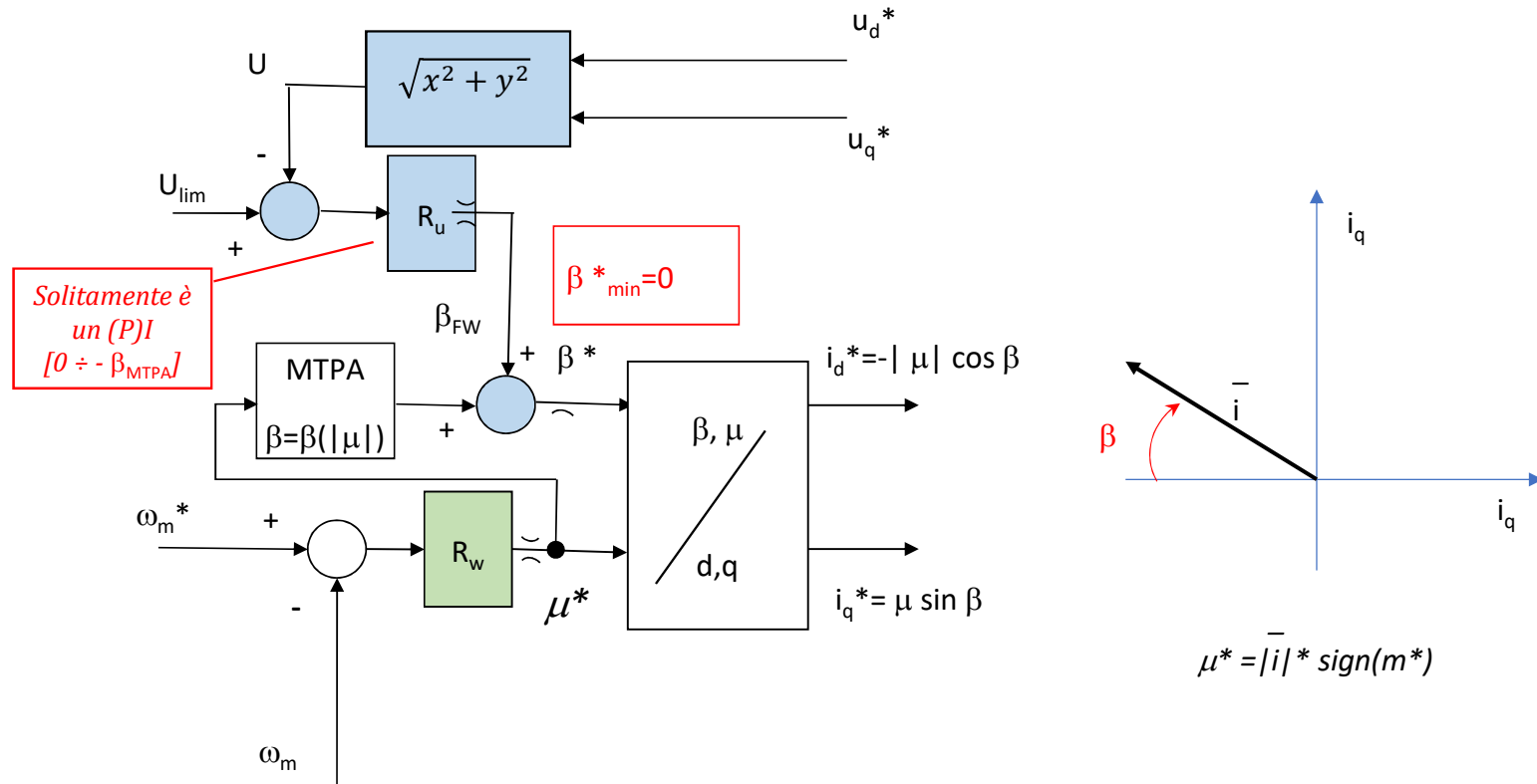
Schema a blocchi del controllo di deflussaggio per motore IPM



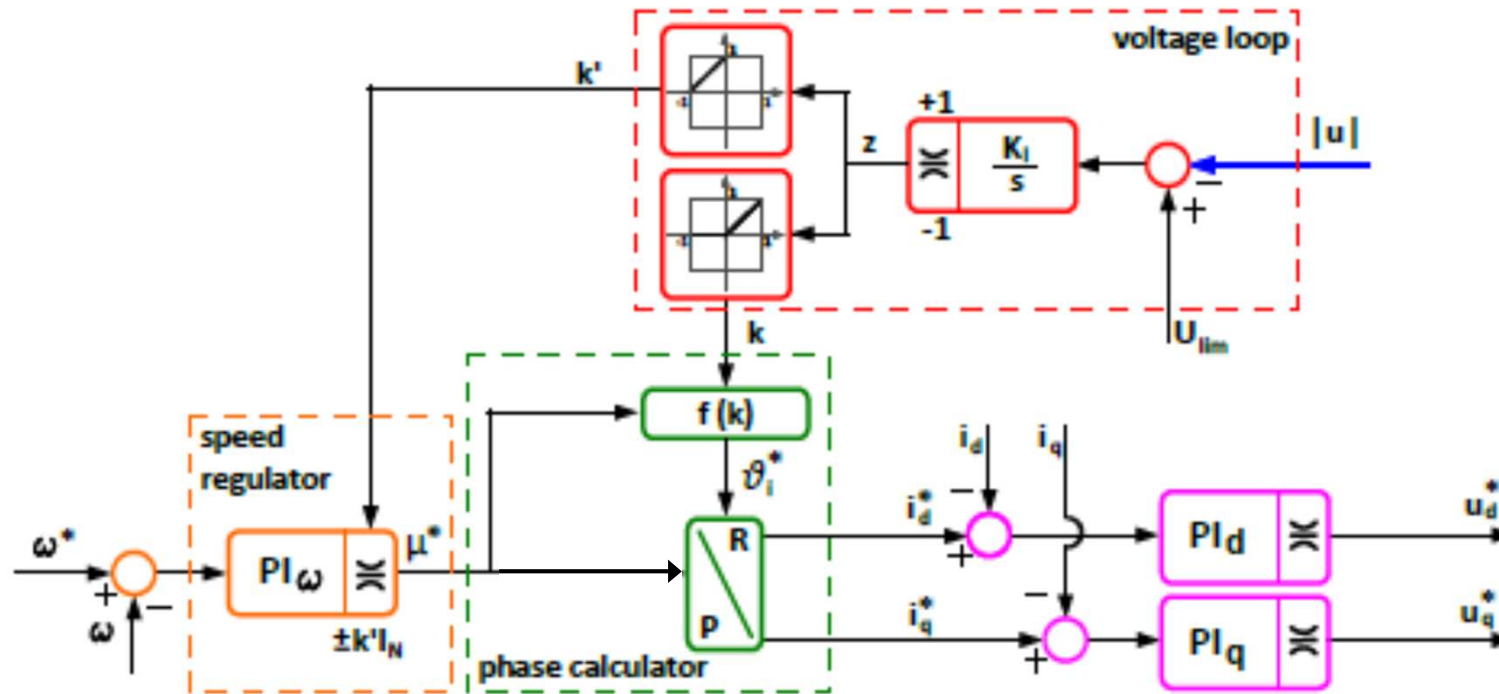
Schema a blocchi del controllo di deflussaggio per motore IPM



Schema a blocchi del controllo di deflussaggio per motore IPM (variante)

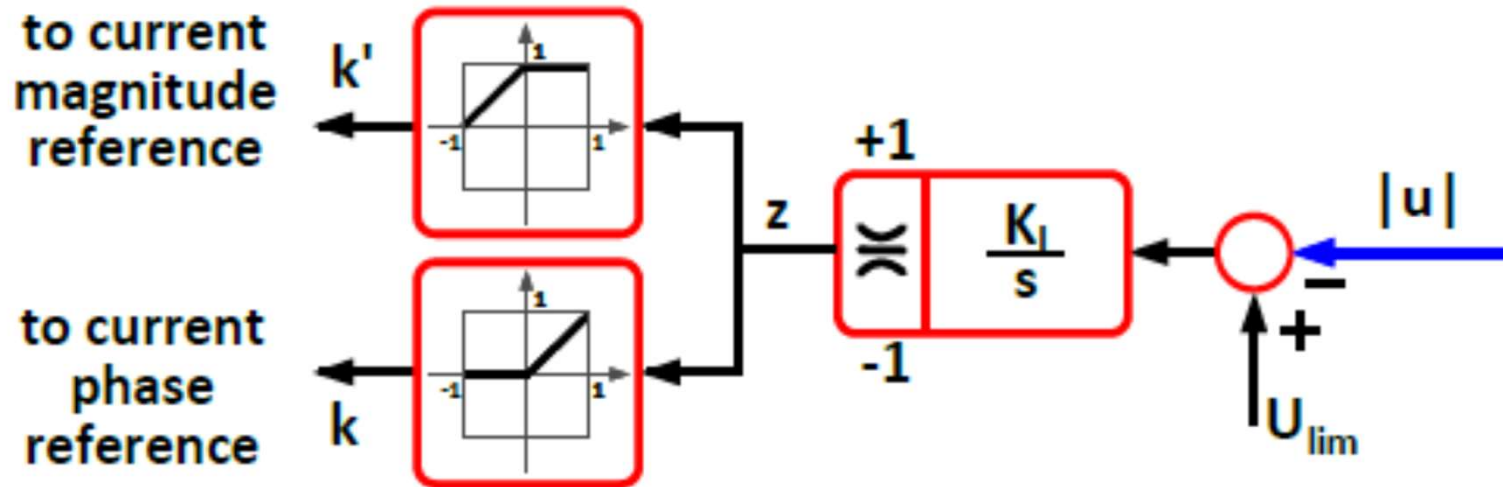


Schema a blocchi del controllo di deflussaggio per motore sincrono a riluttanza



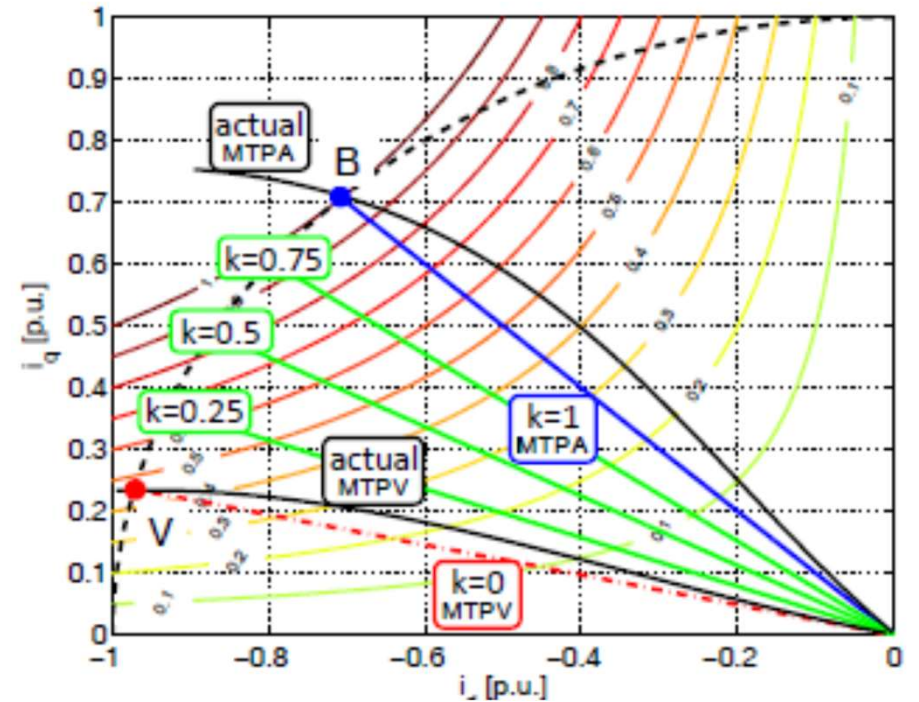
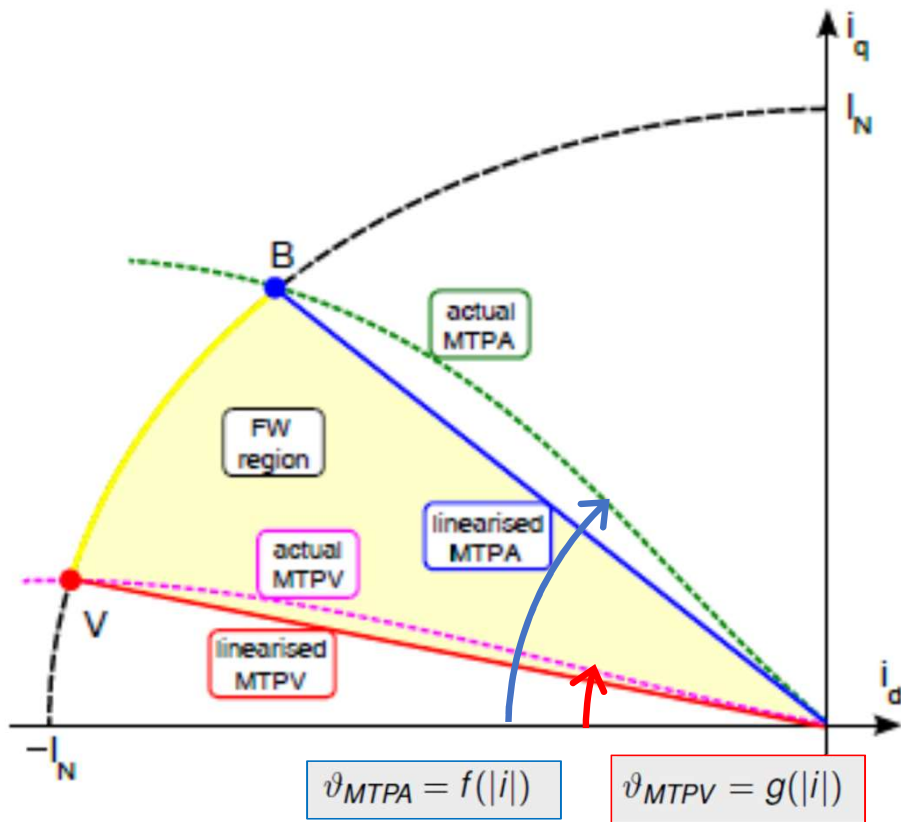
$$\mu^* = \bar{i} * \text{sign}(m^*)$$

Dettaglio del «voltage-loop», che comanda il «deflussaggio»



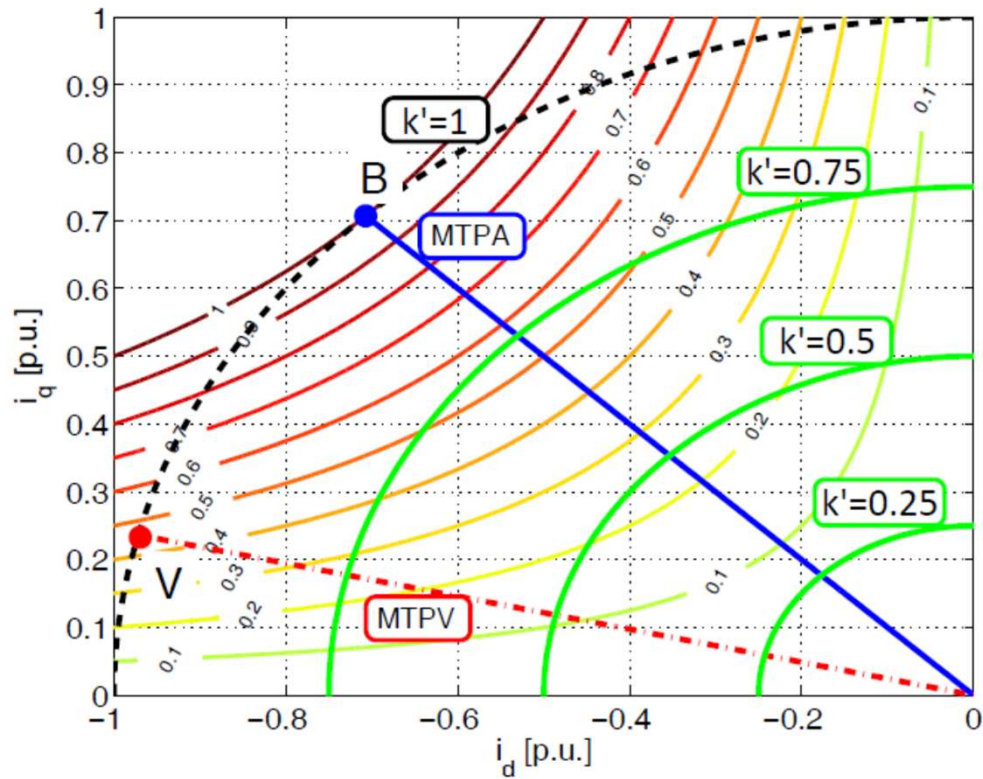
$$k' = \begin{cases} 1, & \text{if } z \geq 0 \\ 1 + z, & \text{if } z < 0 \end{cases} \qquad k = \begin{cases} z, & \text{if } z \geq 0 \\ 0, & \text{if } z < 0 \end{cases}$$

Dettaglio dell'azione di «rotazione» dell'MTPA verso l'MTPV comandata da «k»



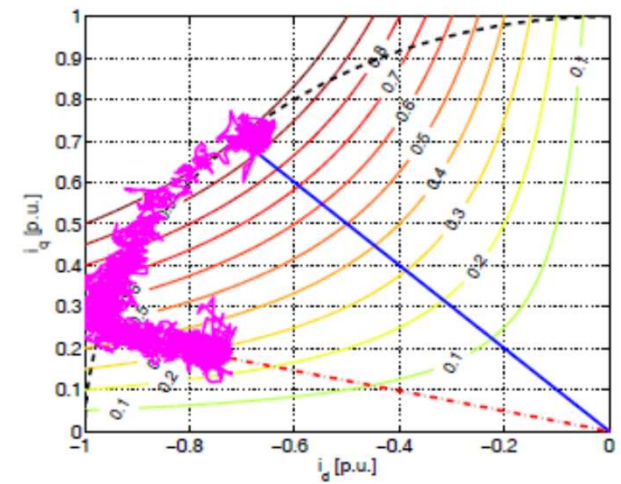
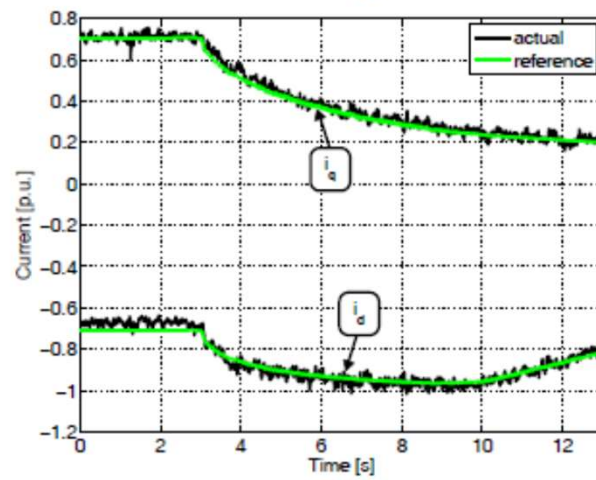
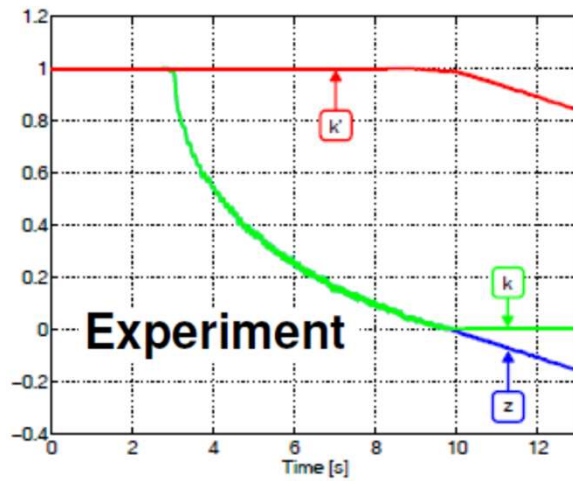
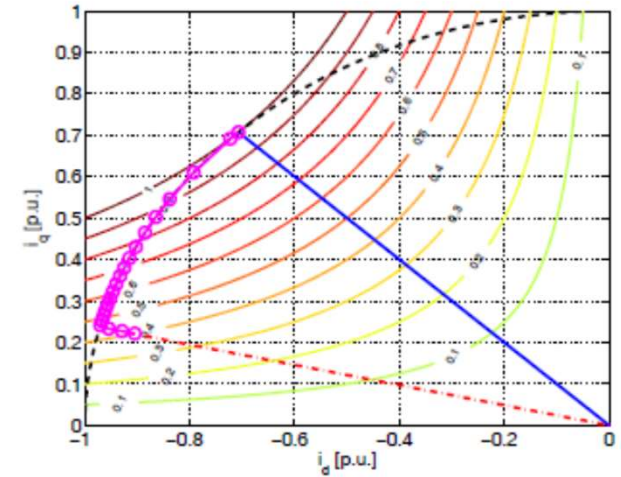
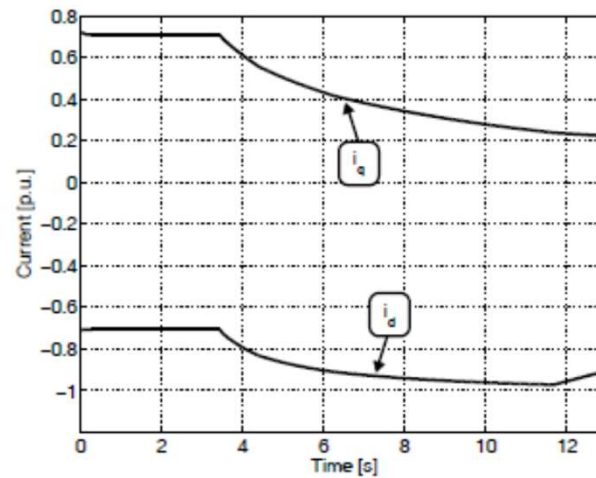
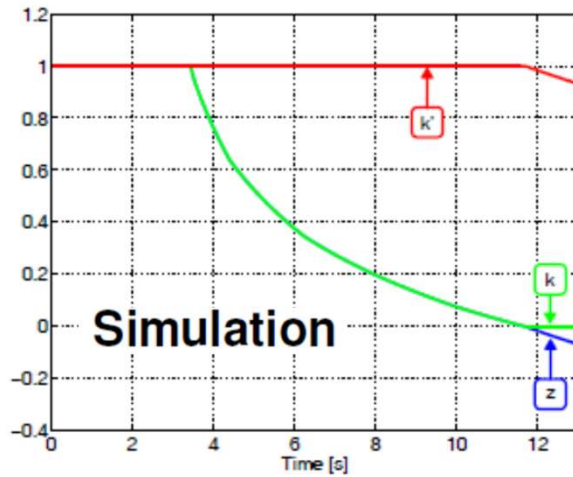
$$\vartheta_i^* = \text{sign}(\mu^*) [k\vartheta_{MTPA} + (1 - k)\vartheta_{MTPV}]$$

Dettaglio dell'azione di «riduzione» della corrente massima comandata da «k'»; agisce solo quando k=0 cioè si opera lungo l'MTPV



$$\pm \mu_{lim} = \pm k' I_N$$

Funzionamento durante una rampa di velocità in limite di coppia



Funzionamento durante una rampa di velocità con $m_L = \text{costante} = 0.3 M_N$

Experiment

