

# 電機械固態控制

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## Assignment #10

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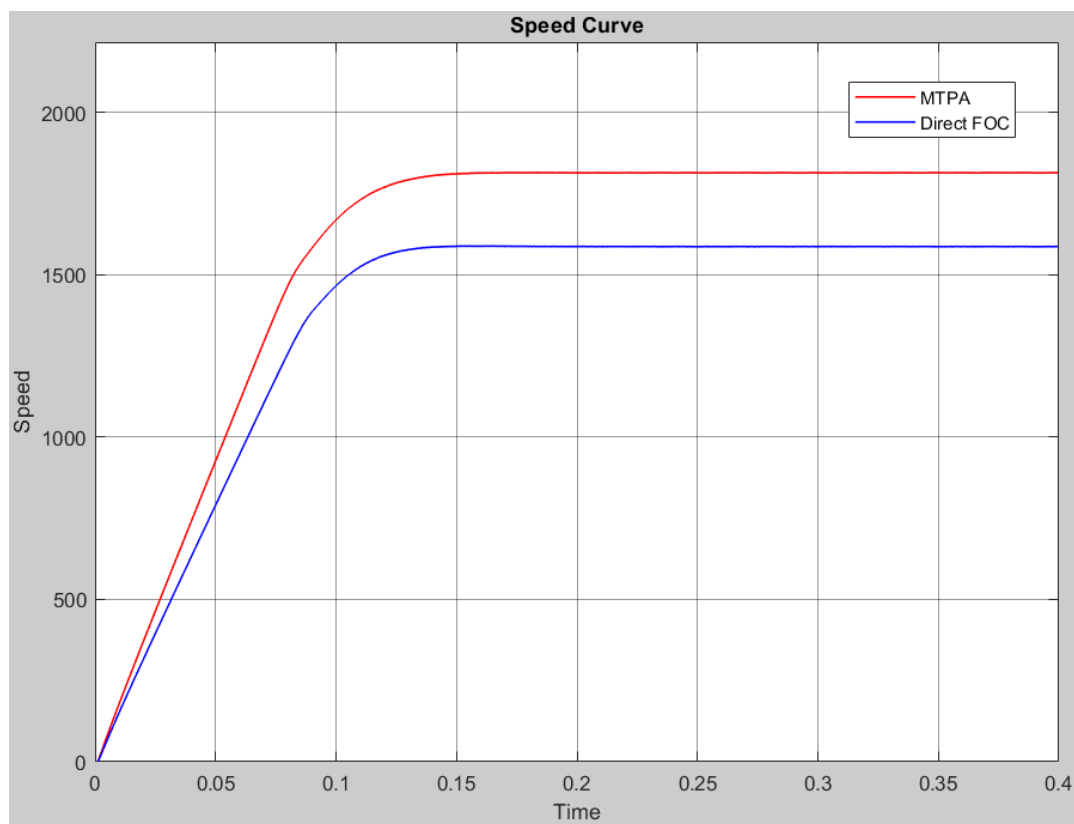
Date：2022 / 1 / 3

# Case 1 : MTPA測試

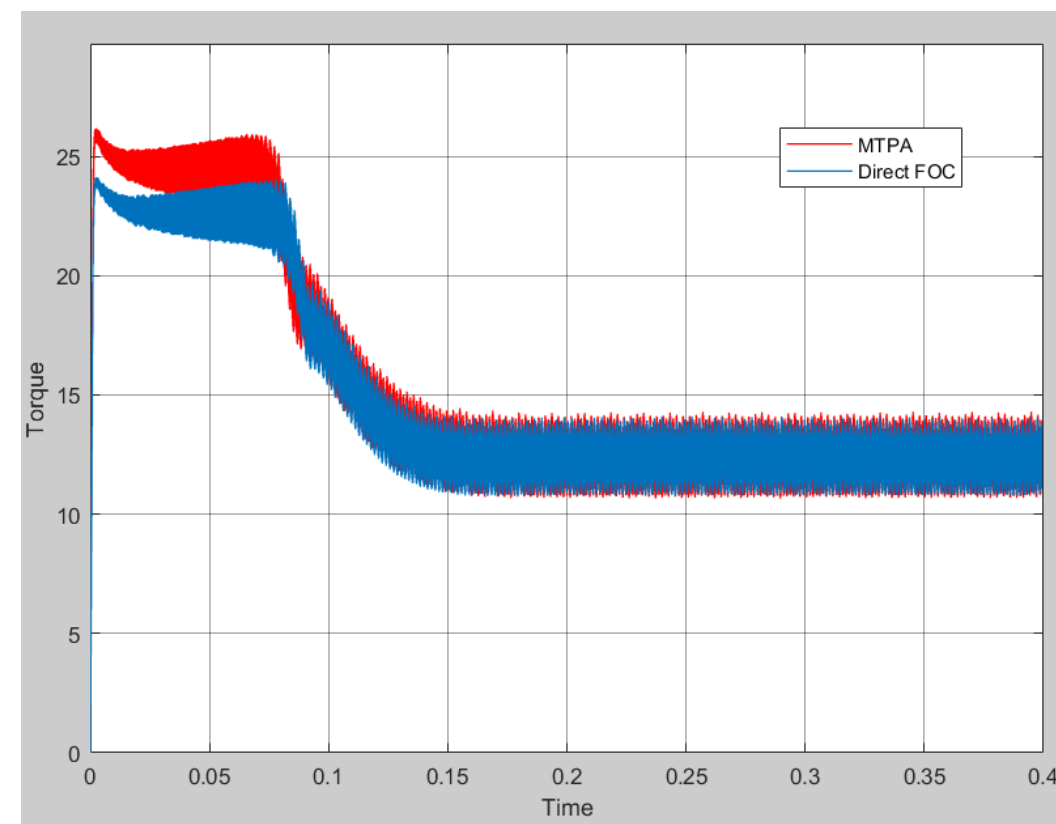
測試條件：2000rpm , 12Nm

使用MTPA可較Direct FOC獲得更高轉速及更高啟動轉矩

## Speed Curve



## Torque Curve

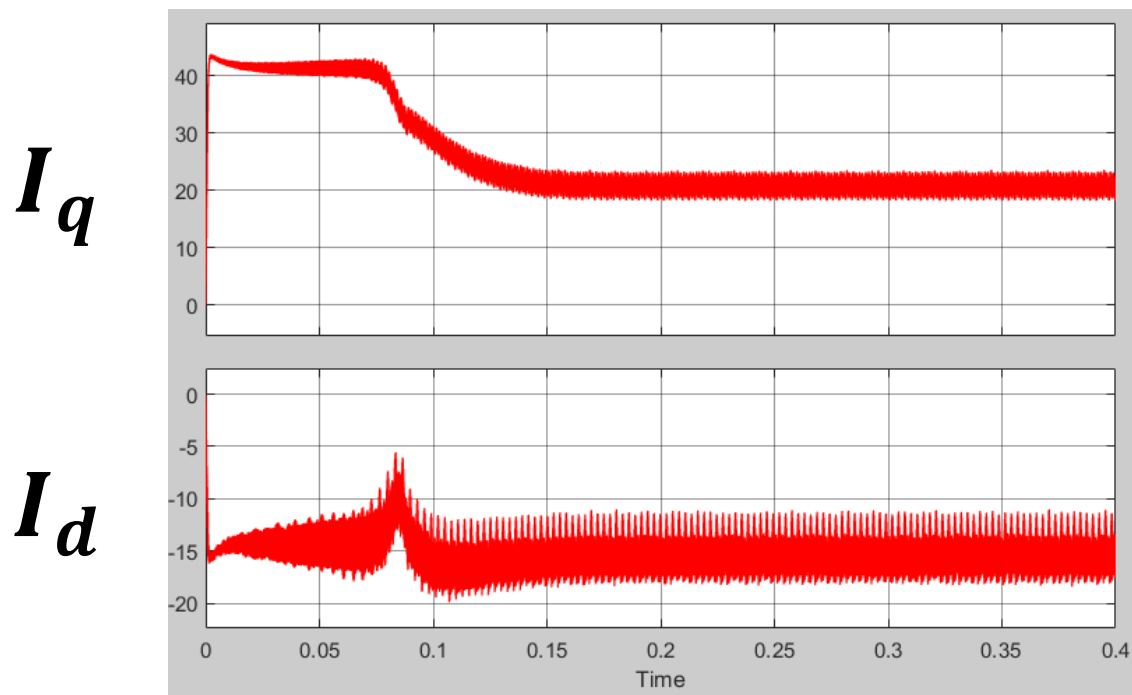


# Case 1 : MTPA測試

測試條件：2000rpm , 12Nm

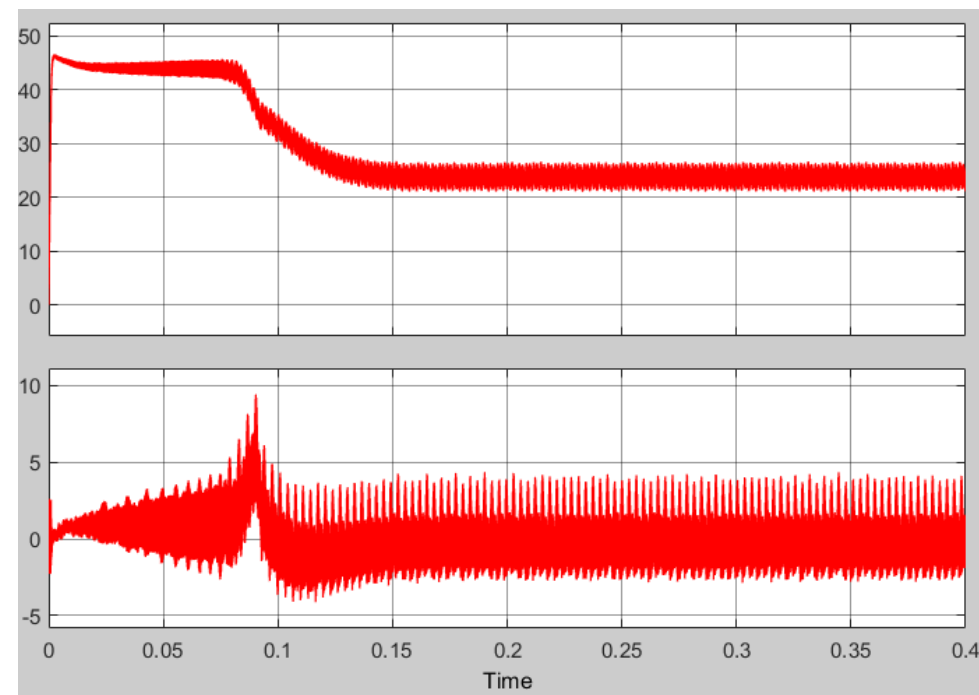
MTPA

穩態時 $I_d$ 為負值



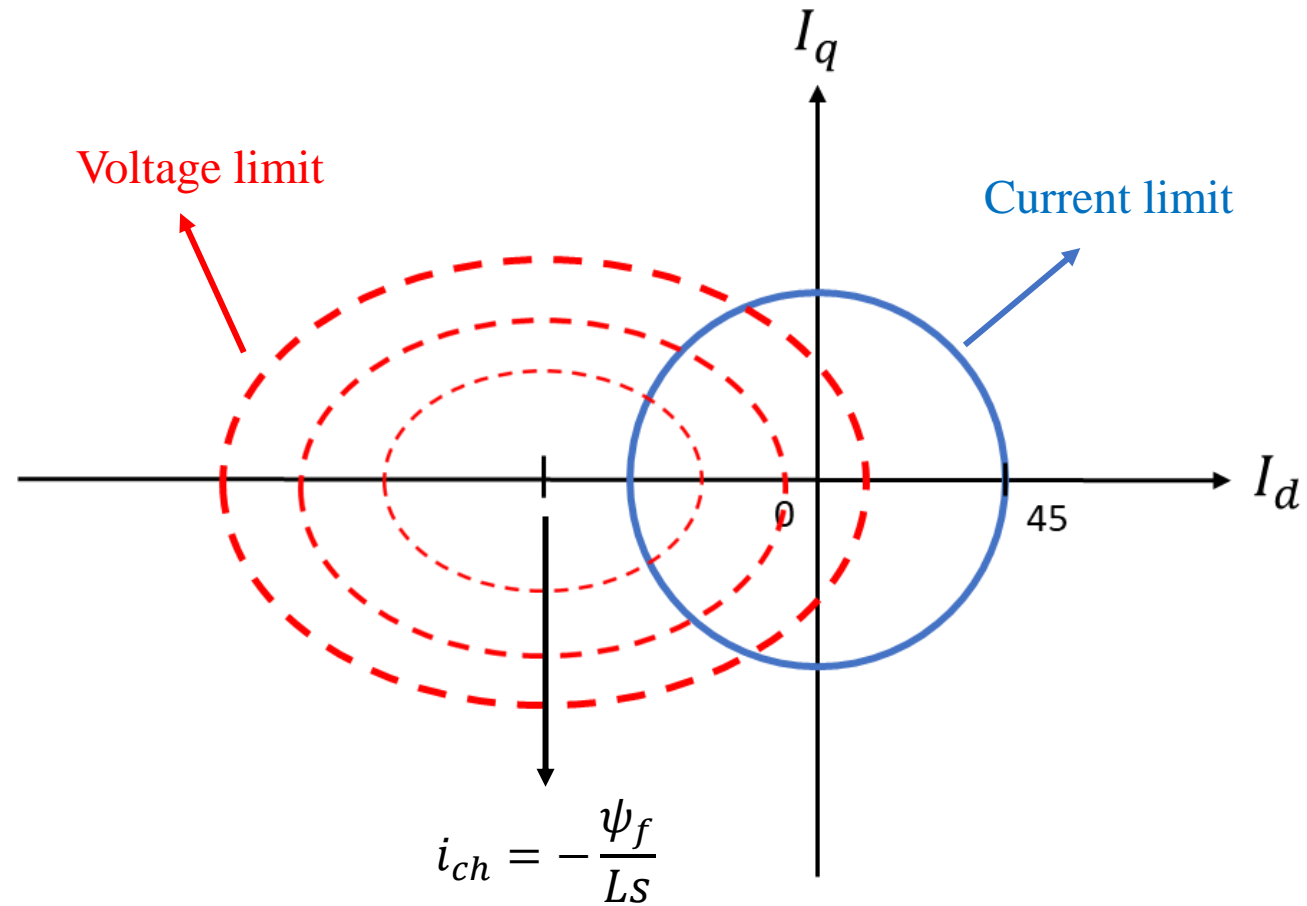
Direct FOC

穩態時 $I_d$ 為0



## Case 2 : Field Weakening 測試

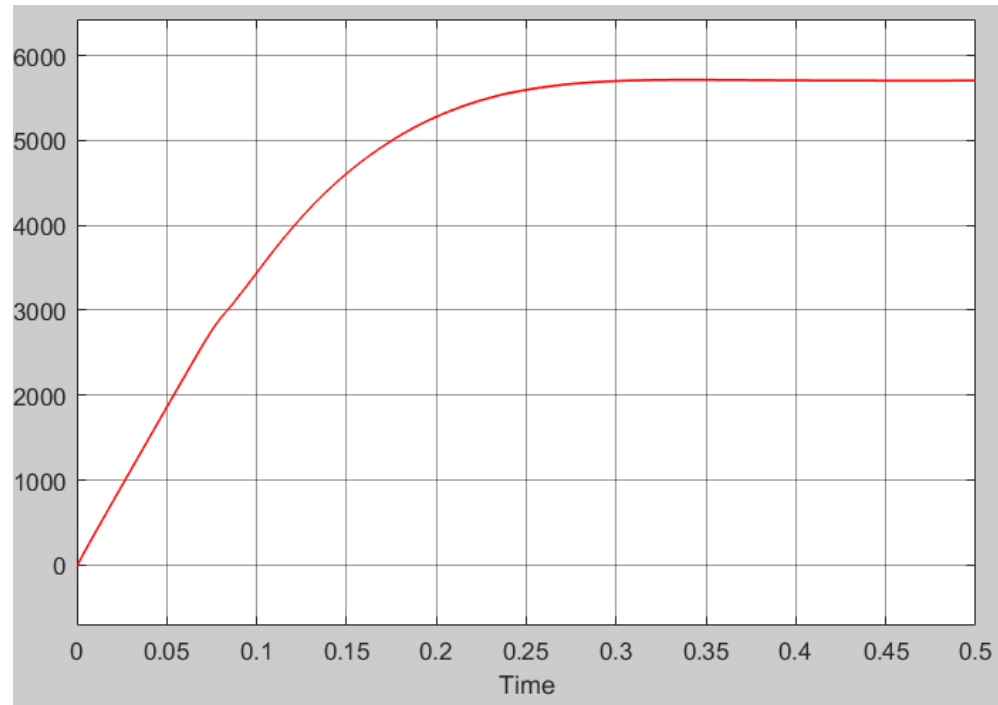
測試條件：6500rpm , 0Nm



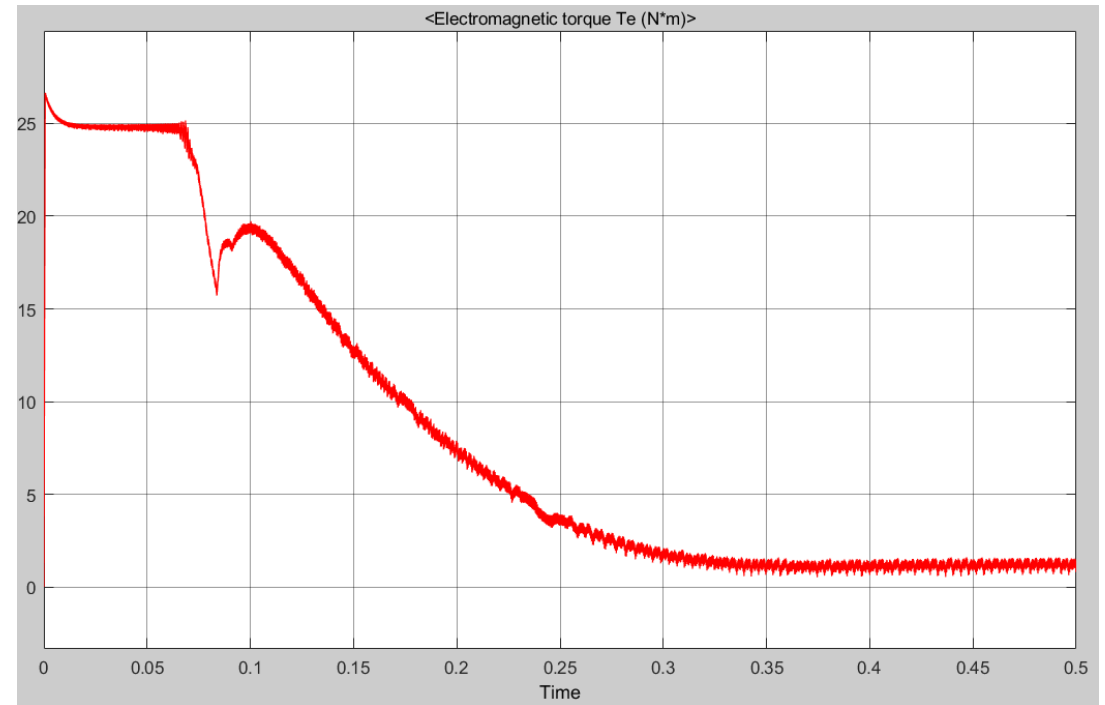
## Case 2 : Field Weakening測試

測試條件：6500rpm , 0Nm

### Speed Curve



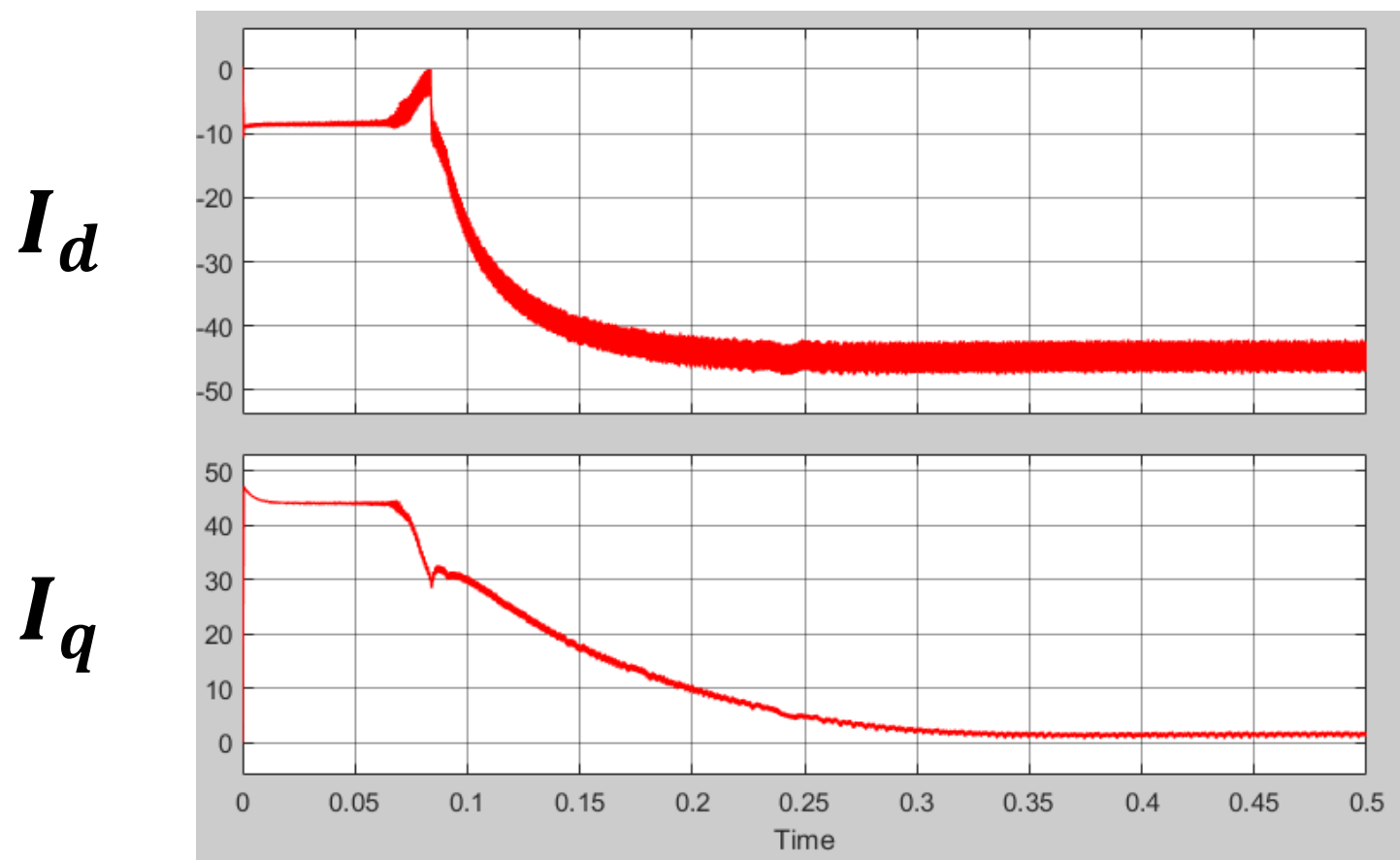
### Torque Curve



## Case 2 : Field Weakening測試

測試條件：6500rpm , 0Nm

無負載下，Field Weakening 後 $I_q$ 穩態電流趨近於0  
 $I_d$ 穩態電流趨近於0



**Thanks for your attention !**

