**POLITECNICO DI MILANO**

**Scuola di Ingegneria Industriale e dell'Informazione**

**Corso di Laurea in Ingegneria Elettrica**

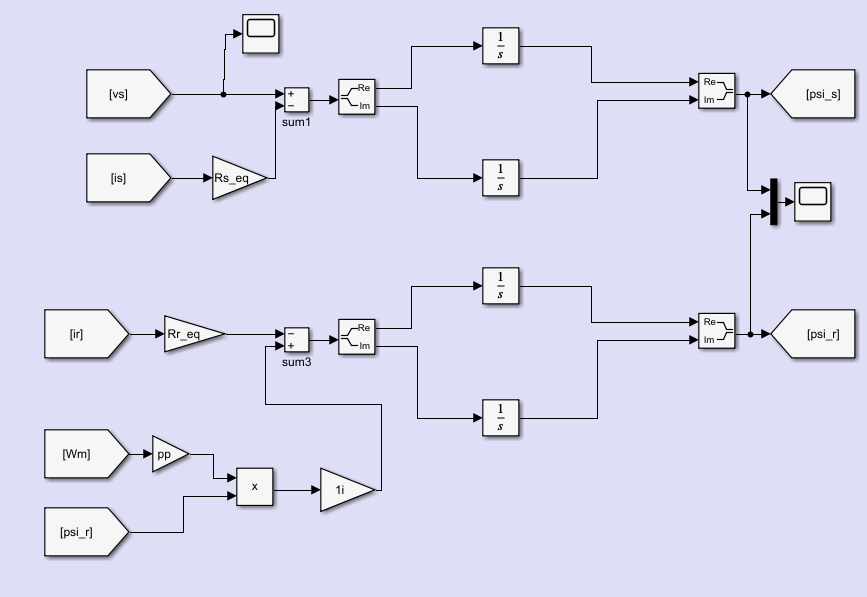


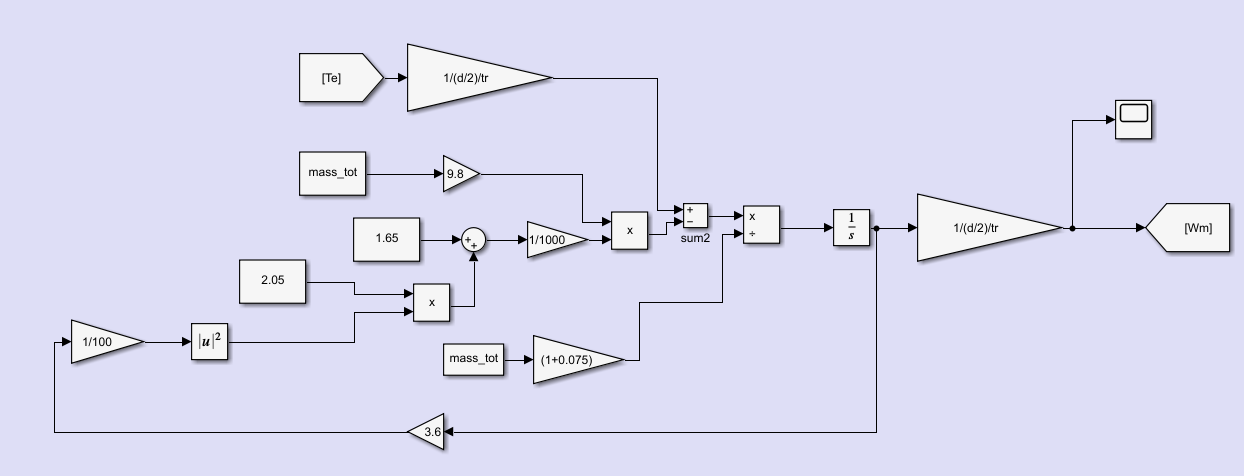
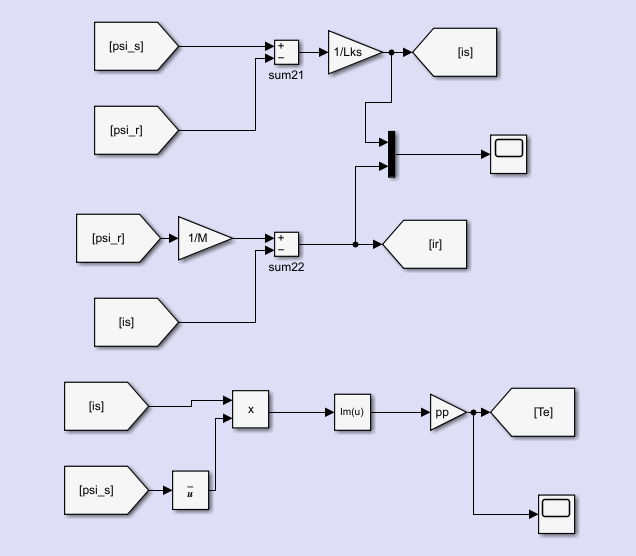
Direct Torque Control for a formula E car

Alessandro Secchi

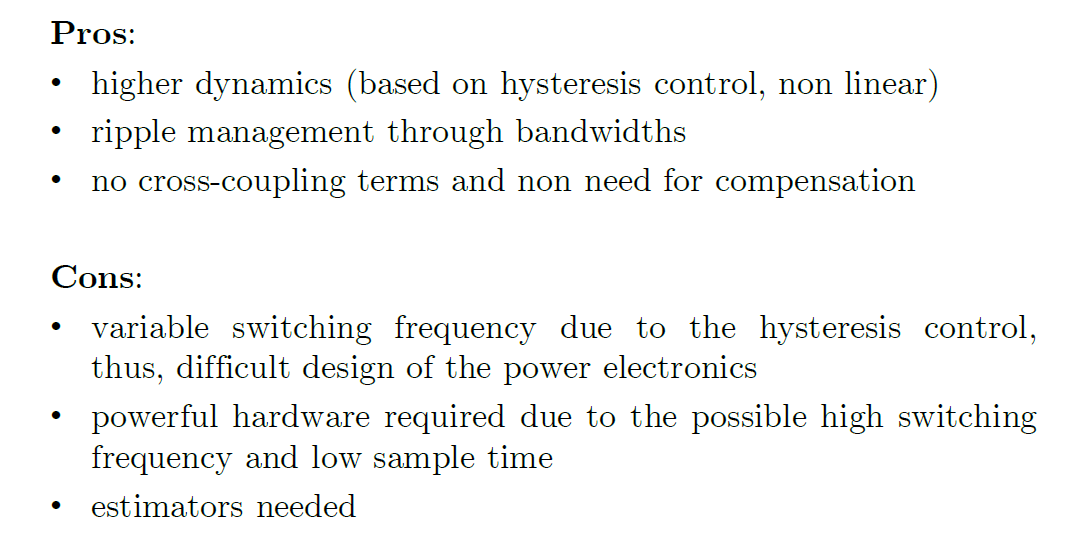
Matr. 944668

For the motor model, a stationary reference frame has ben chosen like with the F.O.C control:

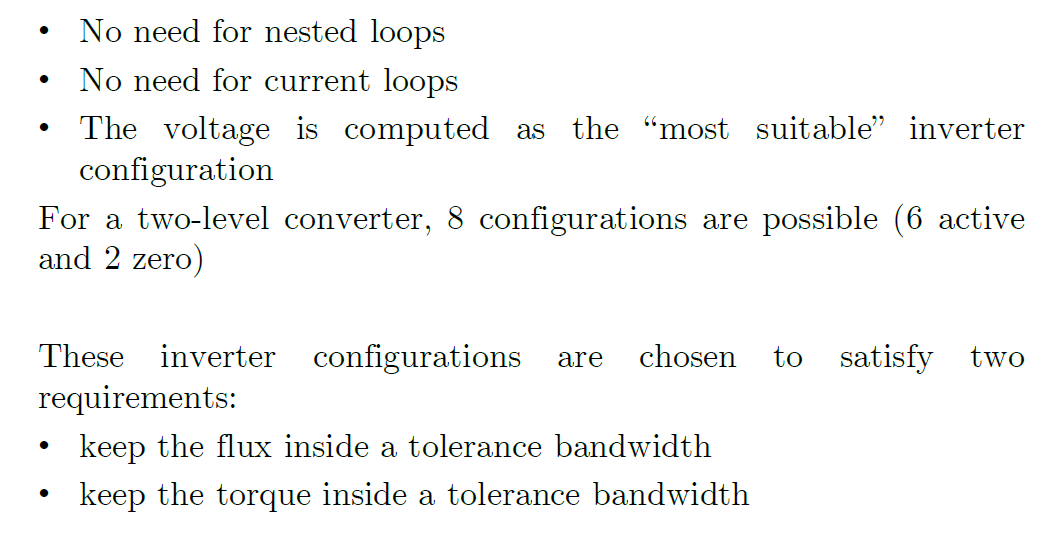


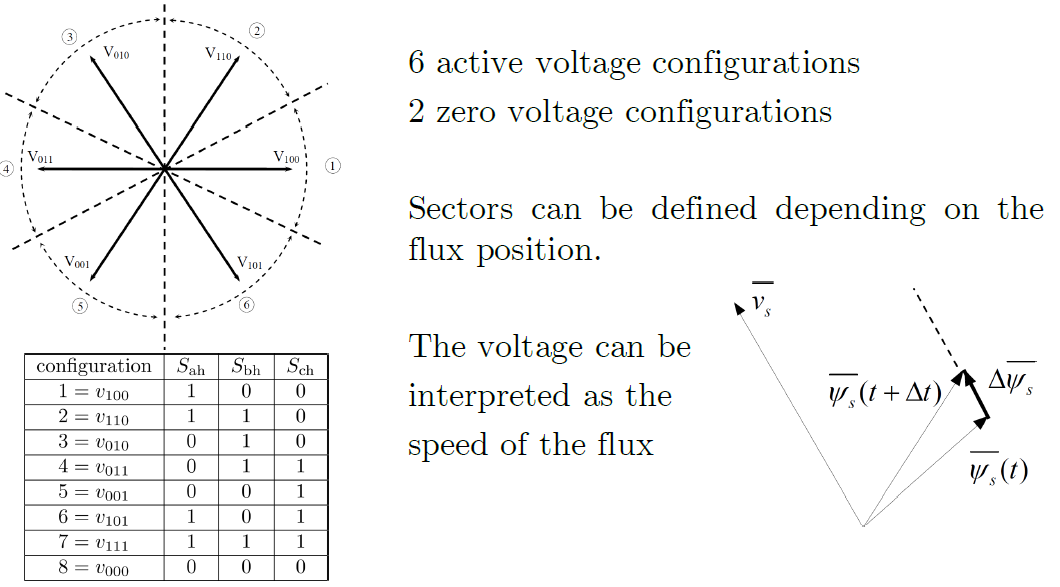


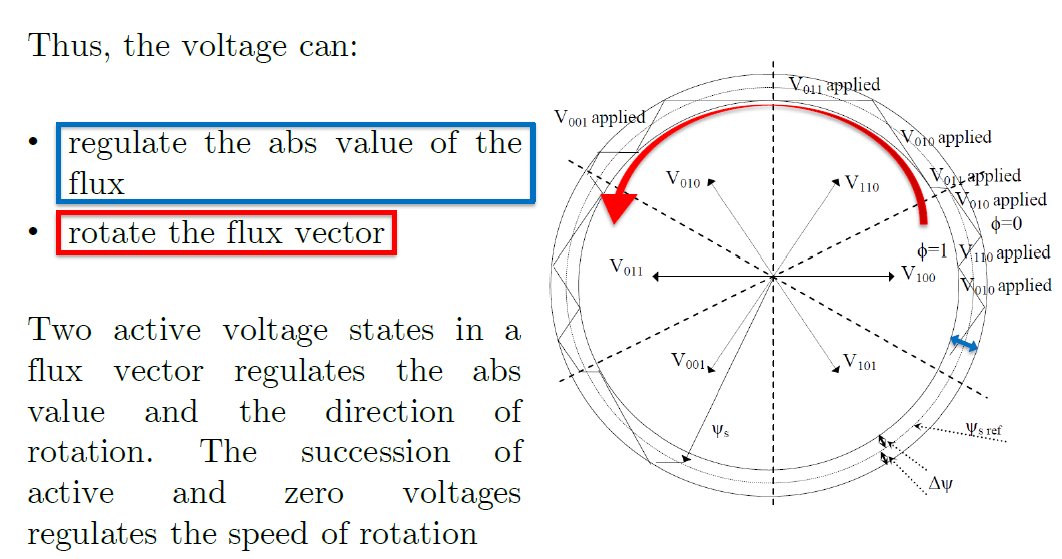
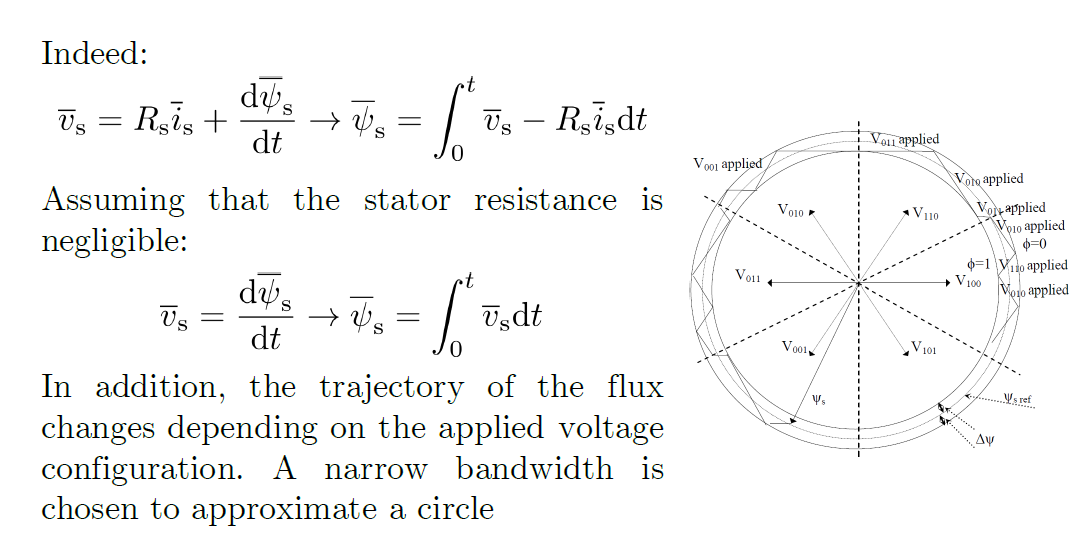
Respect to the F.O.C., there are several pros and cons:

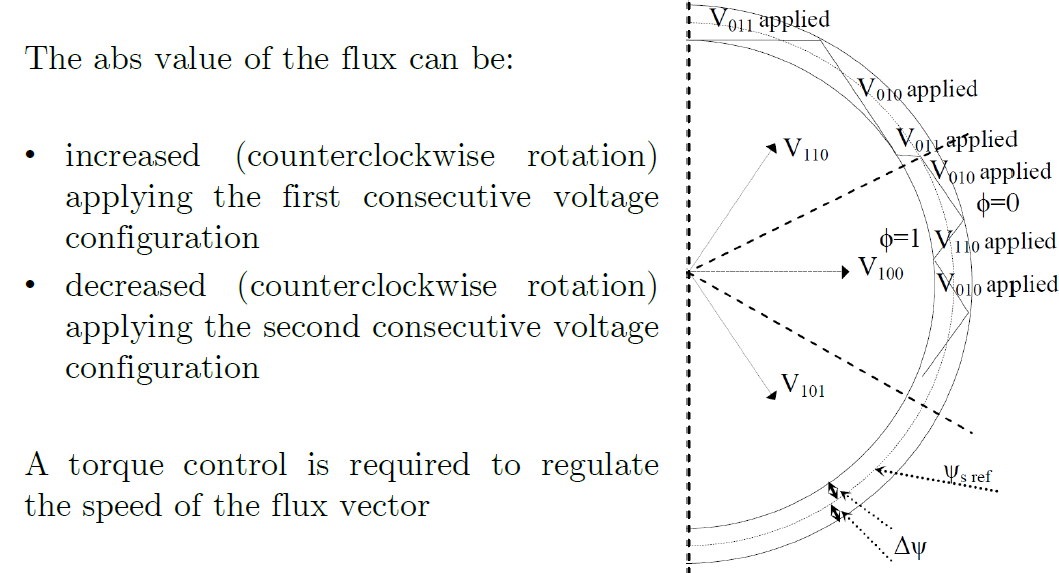


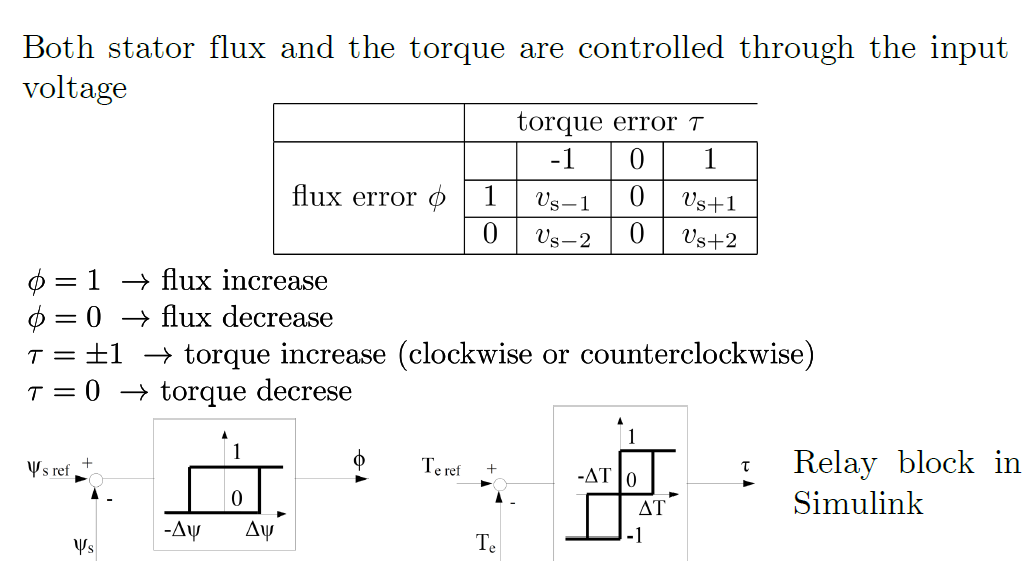
The working principle of the DTC can be described in the following points:

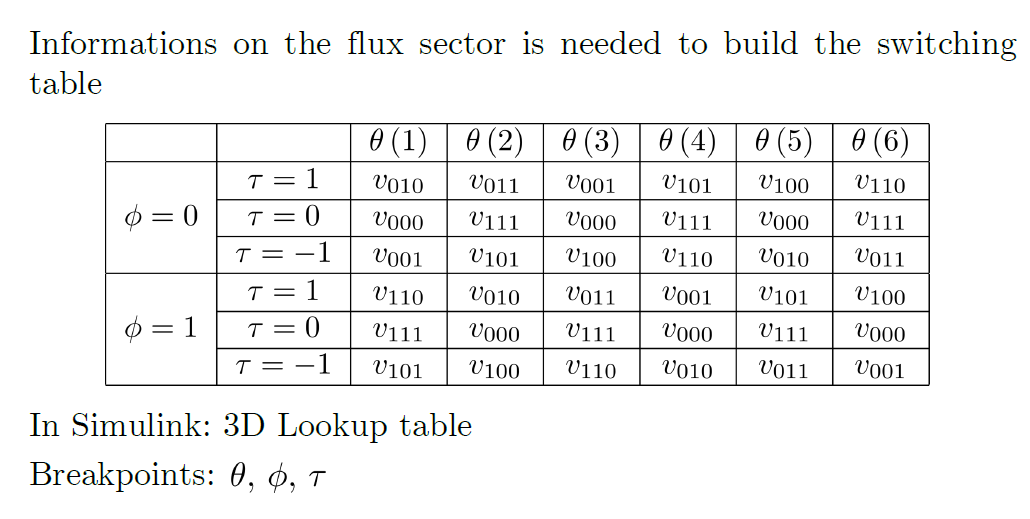


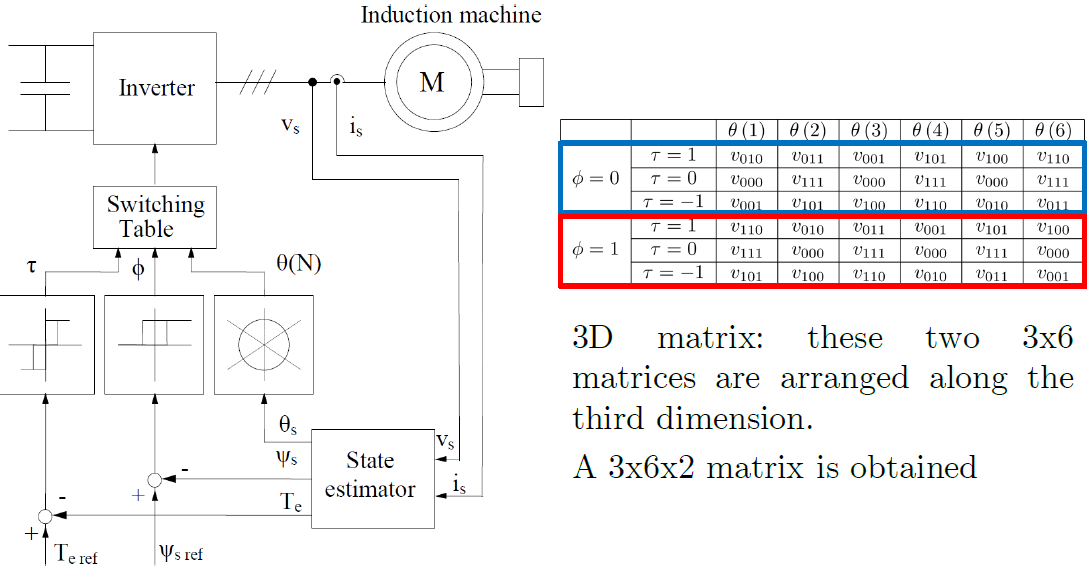




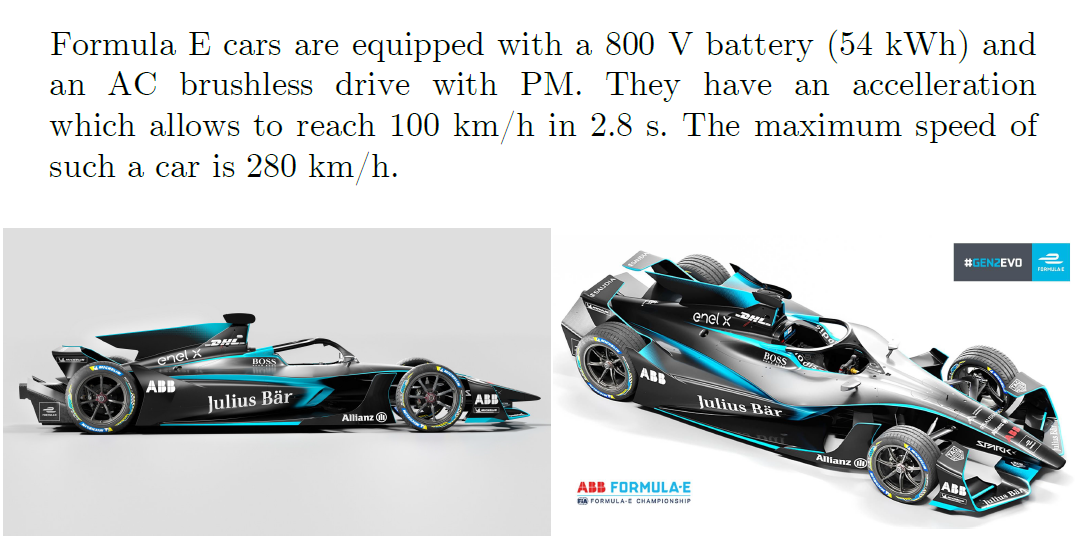






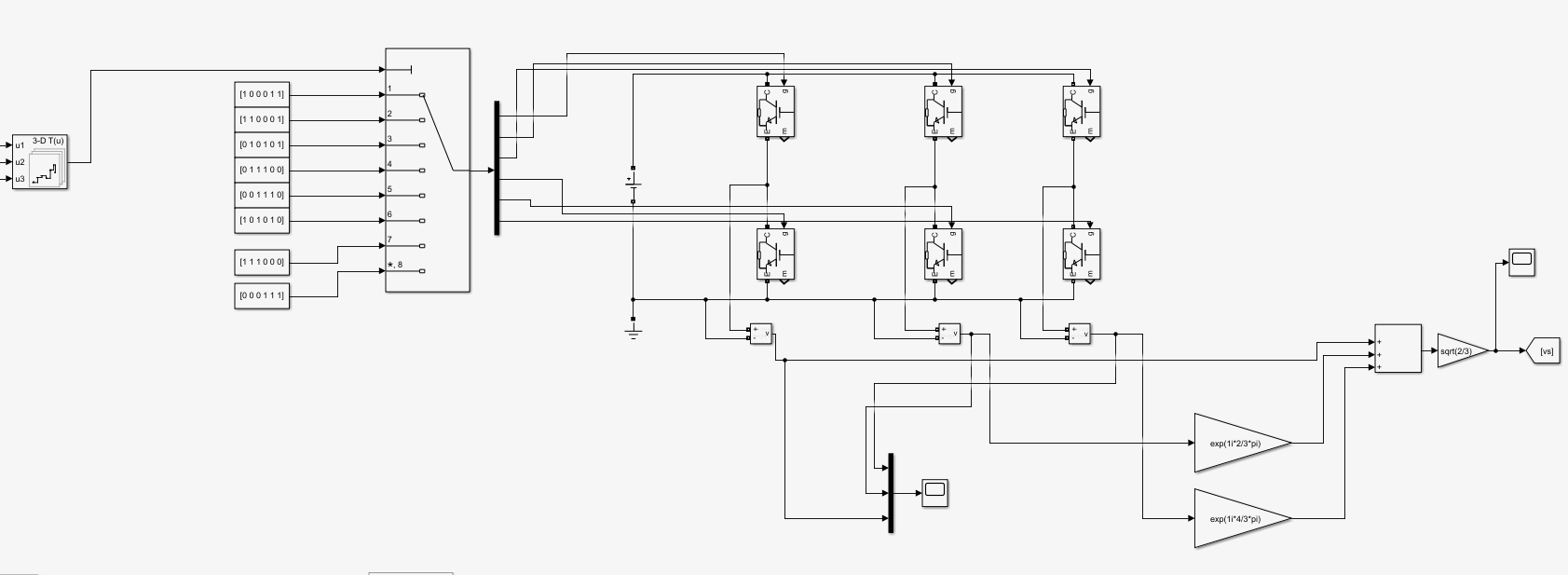
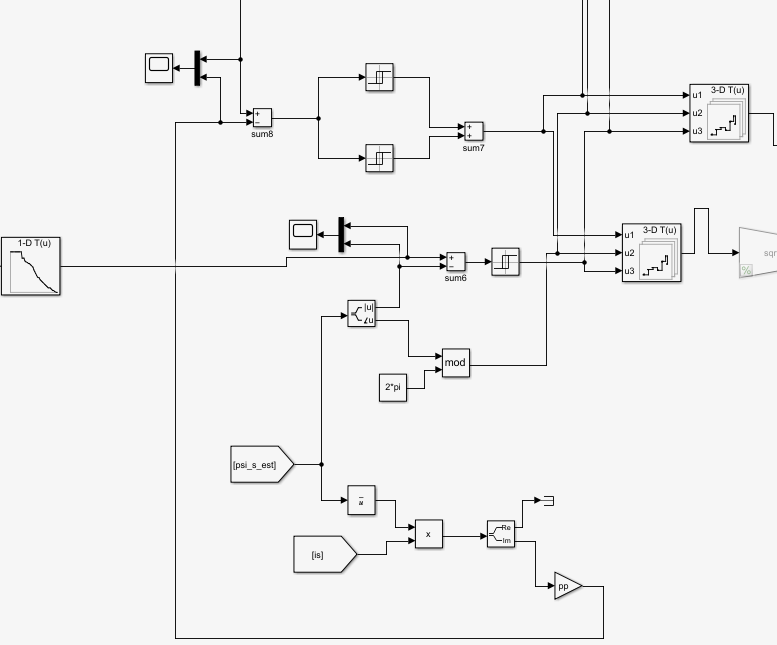
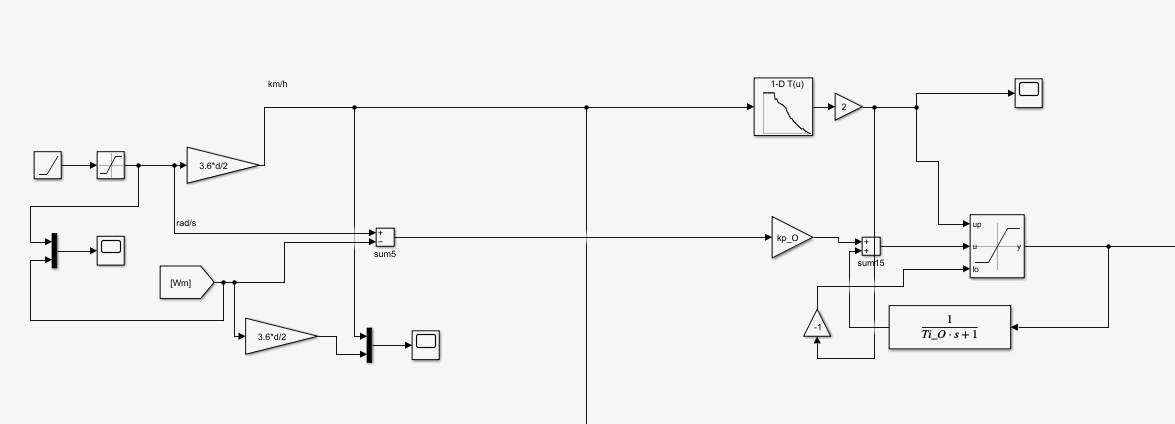


Exercise and data (please refer to the code at the end of the report):



Results:

Simulink models:



Speed profile in km/h: