

# Machines électriques

Introduction

André Hodder

# Informations diverses

Machines électriques (pour EL)

EE-361 / 4 crédits

Enseignant: Hodder André

Langue: Français

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1. Circuit Magnétique
2. Transformateur
3. Eléments de base des machines
4. Machine asynchrone
5. Machine à courant continu
6. Machine synchrone
7. Moteur synchrone à aimants permanents
8. Moteur pas à pas

Dans les plans d'études

Génie électrique et électronique ▾  
2024-2025 Bachelor semestre 6

Passerelle HES - EL ▾  
2024-2025 Semestre printemps

Semaine de référence

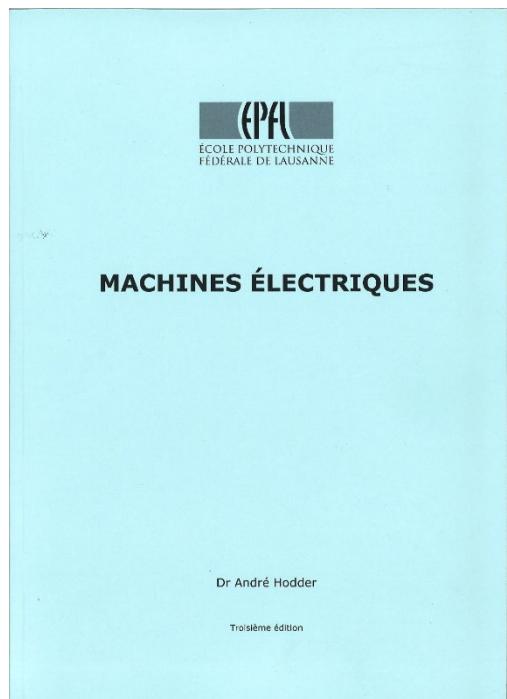
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9-10					
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20-21					
21-22					

Légendes:

- Cours
- Exercice, TP
- Projet, Labo, autre

# Documentation

- Slide de cours
- Exercices
- Polycopié ... en cours de mise à jour
- Vidéos



EPFL

MACHINES ÉLECTRIQUES

André Hodder

overleaf.com/project/62fb58cb31282904d21e1fac

Code Editor Visual Editor Normal text B I ... Recompile

```
9 \begin{equation}
10 \boldsymbol{\partial} \cdot \mathbf{H} = 0
11 \end{equation}
12 \begin{equation}
13 \boldsymbol{\partial} \cdot \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t}
14 \end{equation}
15 \begin{equation}
16 \boldsymbol{\partial} \cdot \mathbf{div} \mathbf{B} = 0
17 \end{equation}
18 Complétées par les relations spécifiques aux matériaux :
19
20 \begin{equation} \label{eq:circmag_champ_B}
21 \mathbf{B} = \mu_0 \mathbf{H}
22 \end{equation}
23 \begin{equation} \label{eq:circmag_E_rho}
24 \mathbf{E} = \rho \mathbf{J}
25 \end{equation}
26 \newpage
27 \subsection{Forme intégrale des équations de Maxwell}
28 \label{title:circmag_equations_Maxwell_int}
29
30
31 Les équations de Maxwell écrites au paragraphe \ref{title:circmag_rappel_Maxwell} expriment des relations en tout point de l'espace, on parle de forme locale. Sous cette forme, elles se prêtent mal à l'étude spécifique des machines électriques et plus particulièrement
```

# Matlab/Simulink/Simscape

- Vos ordinateurs
  - Peu de modules

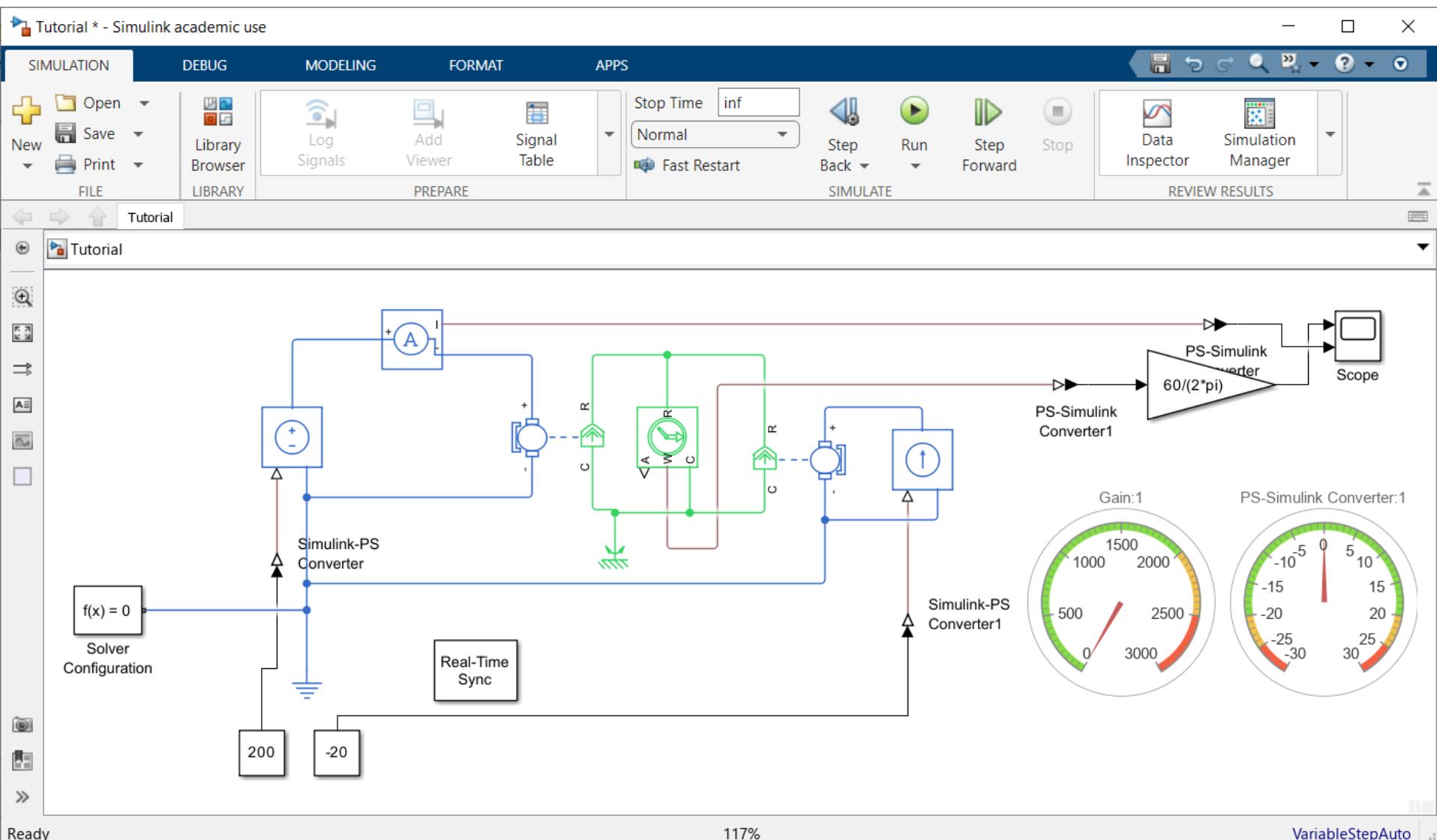


- vdi.epfl.ch

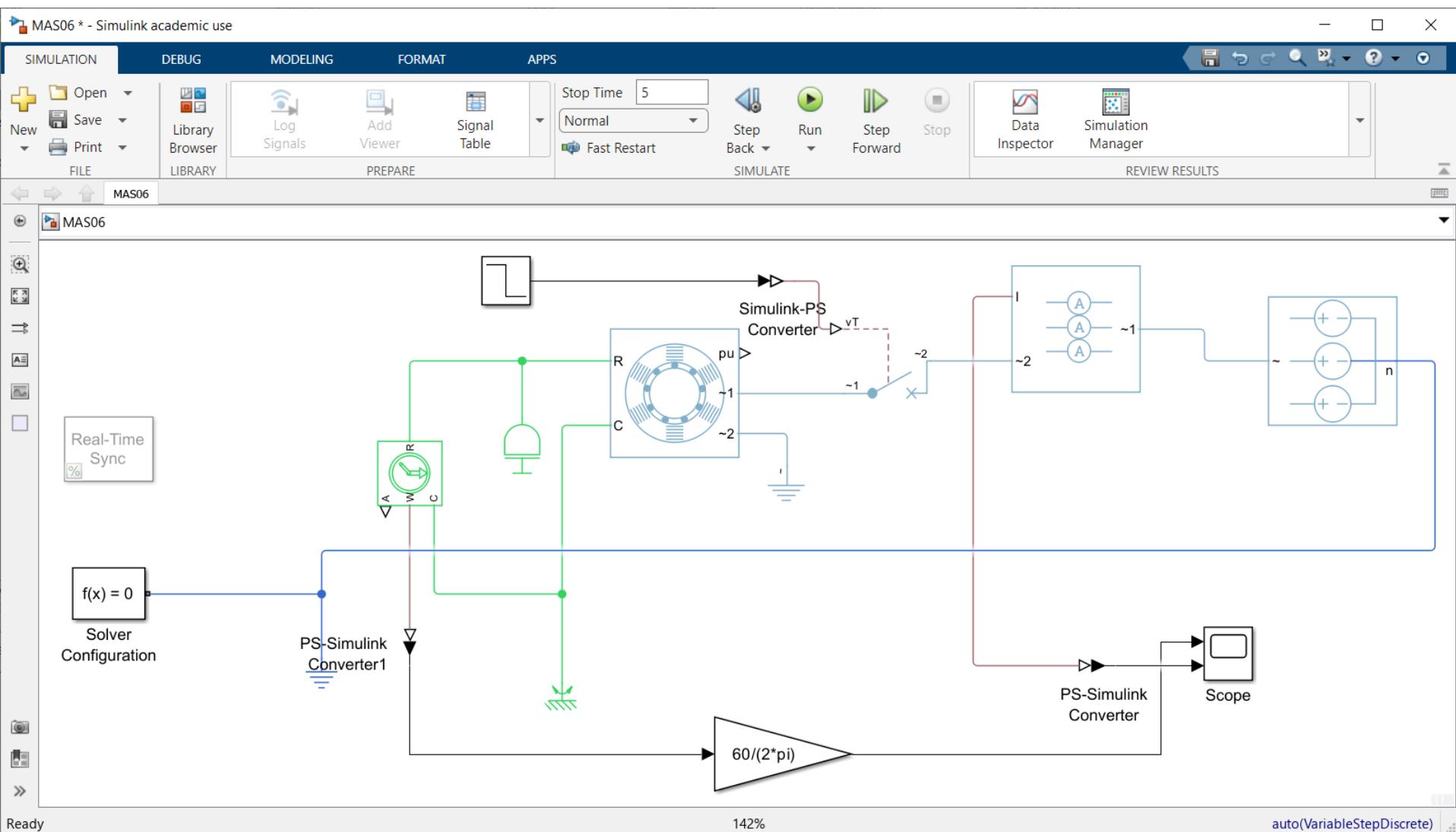
The screenshot shows the MATLAB Add-On Manager interface. The 'Updates' tab is selected, showing a list of installed add-ons. Red arrows point from the list items to the corresponding rows in the table below.

Name	Author	Install Date
MATLAB Report Generator version 24.1	MathWorks	30 January 2025
Parallel Computing Toolbox version 24.1	MathWorks	30 January 2025
<b>Simscape</b> version 24.1	MathWorks	30 January 2025
Simscape Battery version 24.1	MathWorks	30 January 2025
Simscape Driveline version 24.1	MathWorks	30 January 2025
<b>Simscape Electrical</b> version 24.1	MathWorks	30 January 2025
Simscape Fluids version 24.1	MathWorks	30 January 2025
Simscape Multibody version 24.1	MathWorks	30 January 2025
<b>Simulink</b> version 24.1	MathWorks	30 January 2025
Simulink Desktop Real-Time version 24.1	MathWorks	30 January 2025
Symbolic Math Toolbox	MathWorks	30 January 2025
TPBlueBox version 4.5	André Hodder	18 September ...
TPCircMag version 4.6	André Hodder	19 March 2024
TPImportBackup version 1.1	André Hodder	16 April 2024
TPMAS version 5.0	André Hodder	15 October 2024
TPMoteurDC version 5.7	André Hodder	16 April 2024
Variable Reluctance Motor (Stepper Motor) version 1.5	André Hodder	16 April 2024

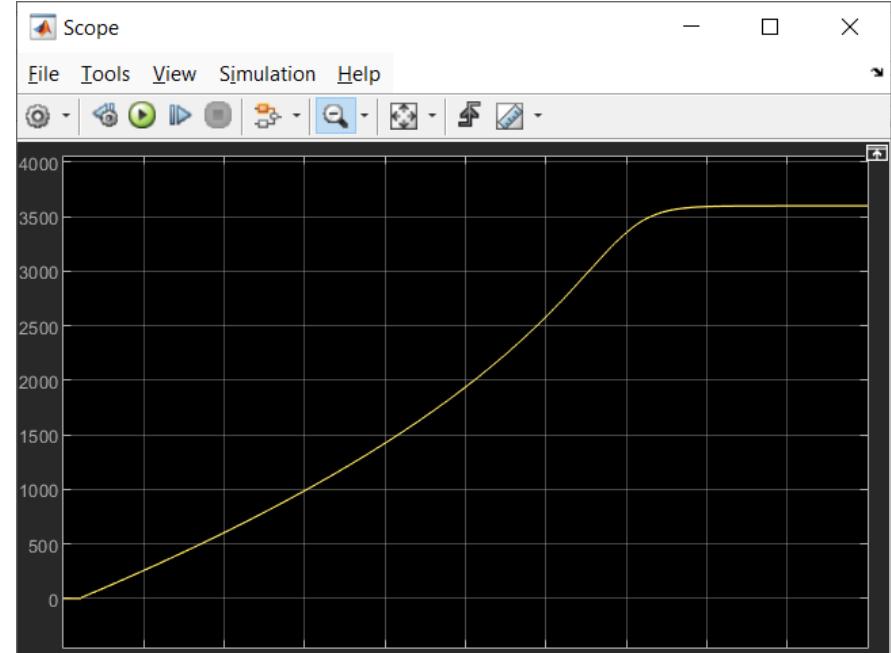
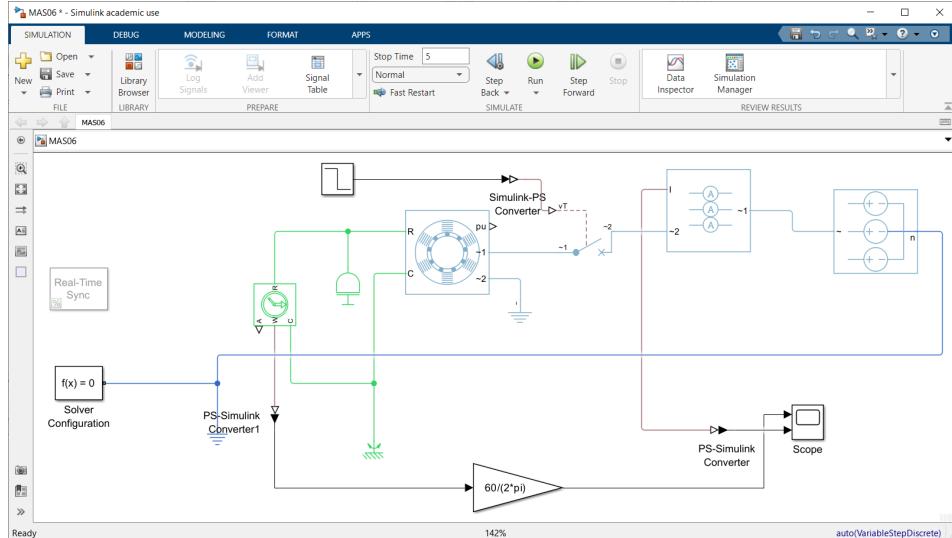
# Matlab/Simulink/Simscape



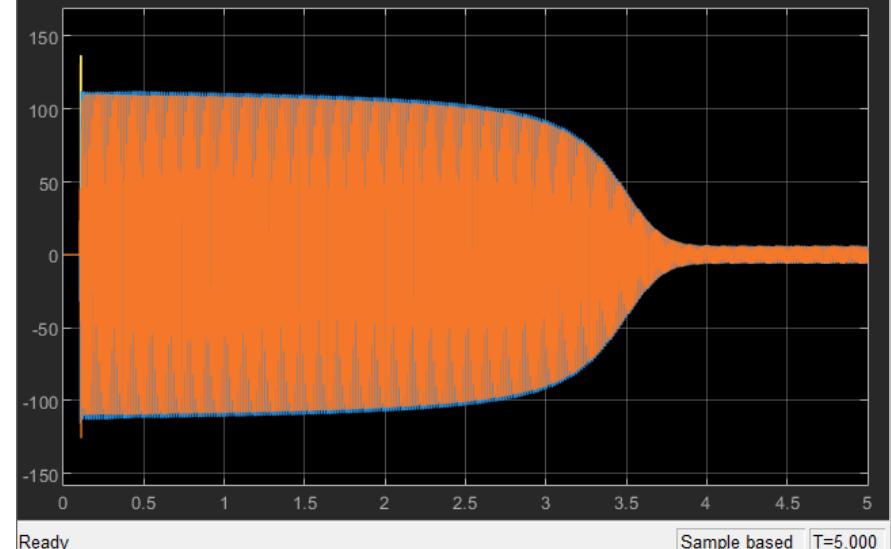
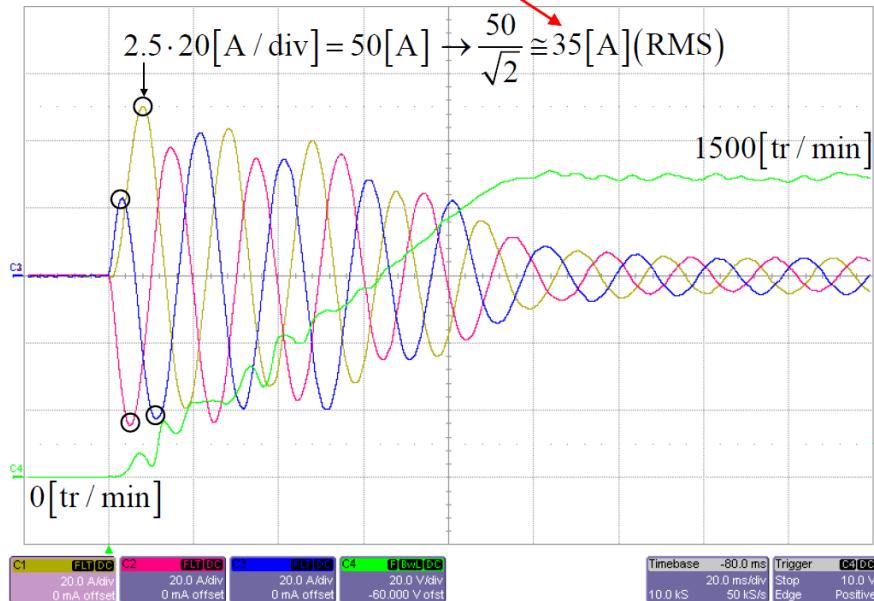
# Matlab/Simulink/Simscape



# Matlab/Simulink/Simscape



Démarrage d'un moteur asynchrone 2.2 kW  
( $I_n=5A$ )





Discord



Discord EE-361