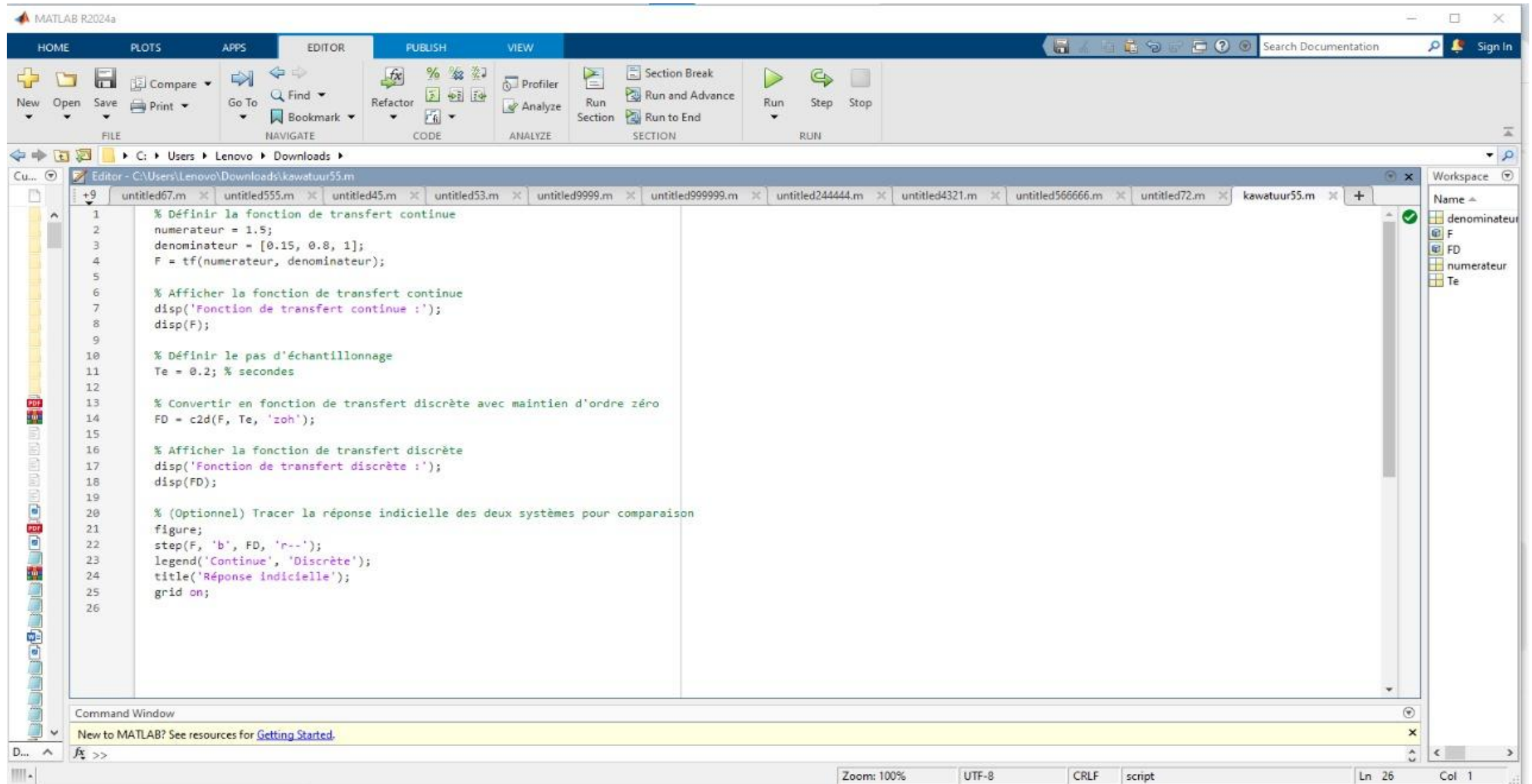


**Modélisation et commande des
systèmes continus et numériques**

I. Partie 1 : Etude du système en boucle ouverte



1. Fonction de transfert continue

Command Window

New to MATLAB? See resources for [Getting Started](#).

```
>> kawatuur55
Fonction de transfert continue :
  tf with properties:

    Numerator: {[0 0 1.5000]}
  Denominator: {[0.1500 0.8000 1]}
    Variable: 's'
    IODelay: [0]
  InputDelay: [0]
OutputDelay: [0]
  InputName: {''}
  InputUnit: {''}
  InputGroup: [1x1 struct]
  OutputName: {''}
  OutputUnit: {''}
  OutputGroup: [1x1 struct]
    Notes: [0x1 string]
  UserData: []
    Name: ''
    Ts: [0]
  TimeUnit: 'seconds'
SamplingGrid: [1x1 struct]
```

```
Fonction de transfert discrète :
  tf with properties:
```

```
fx      Numerator: {[0 0.1415 0.0991]}
```

2. Fonction de transfert discrète

Command Window

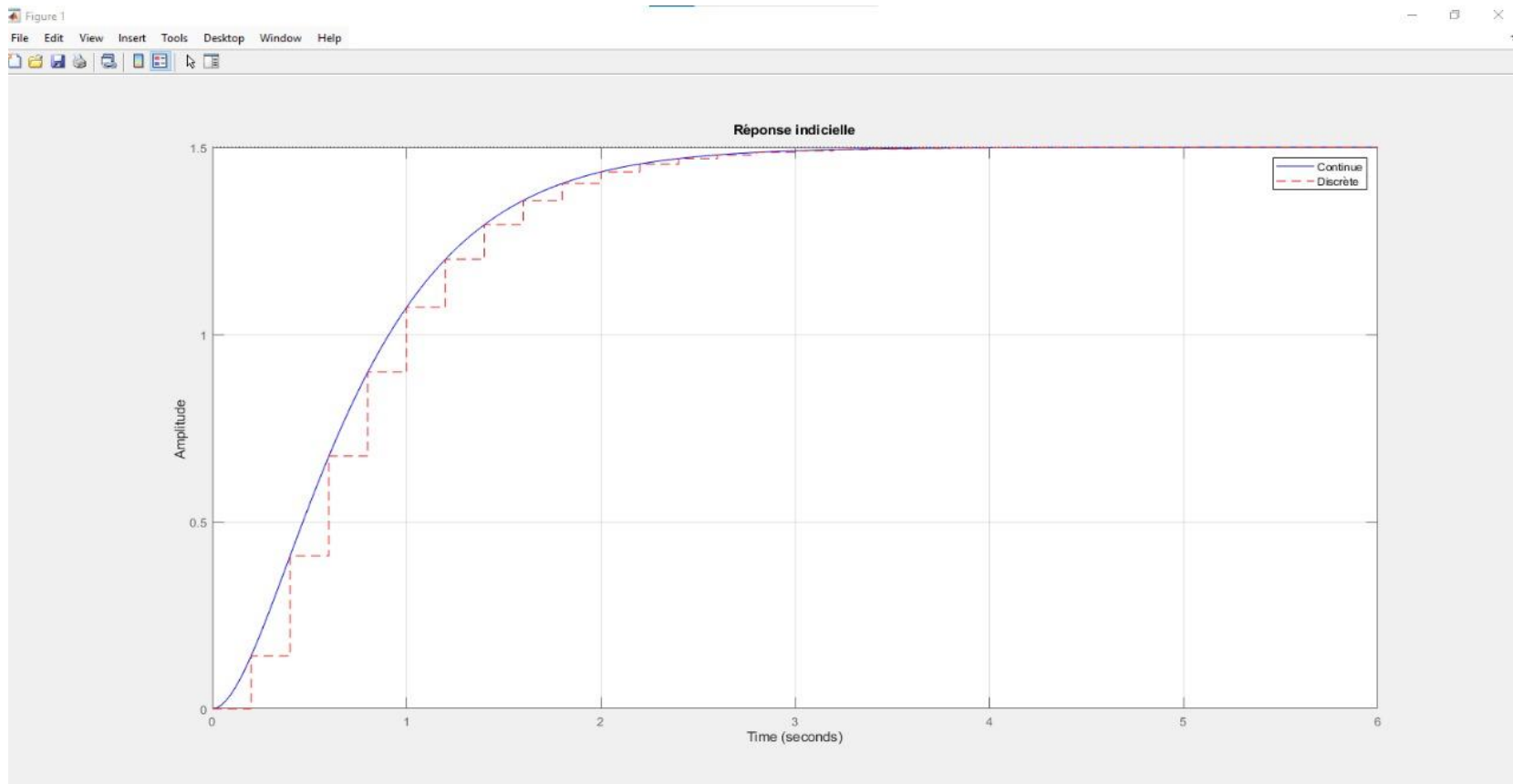
New to MATLAB? See resources for [Getting Started](#).

```
Ts: [0]
TimeUnit: 'seconds'
SamplingGrid: [1x1 struct]
```

Fonction de transfert discrète :
tf with properties:

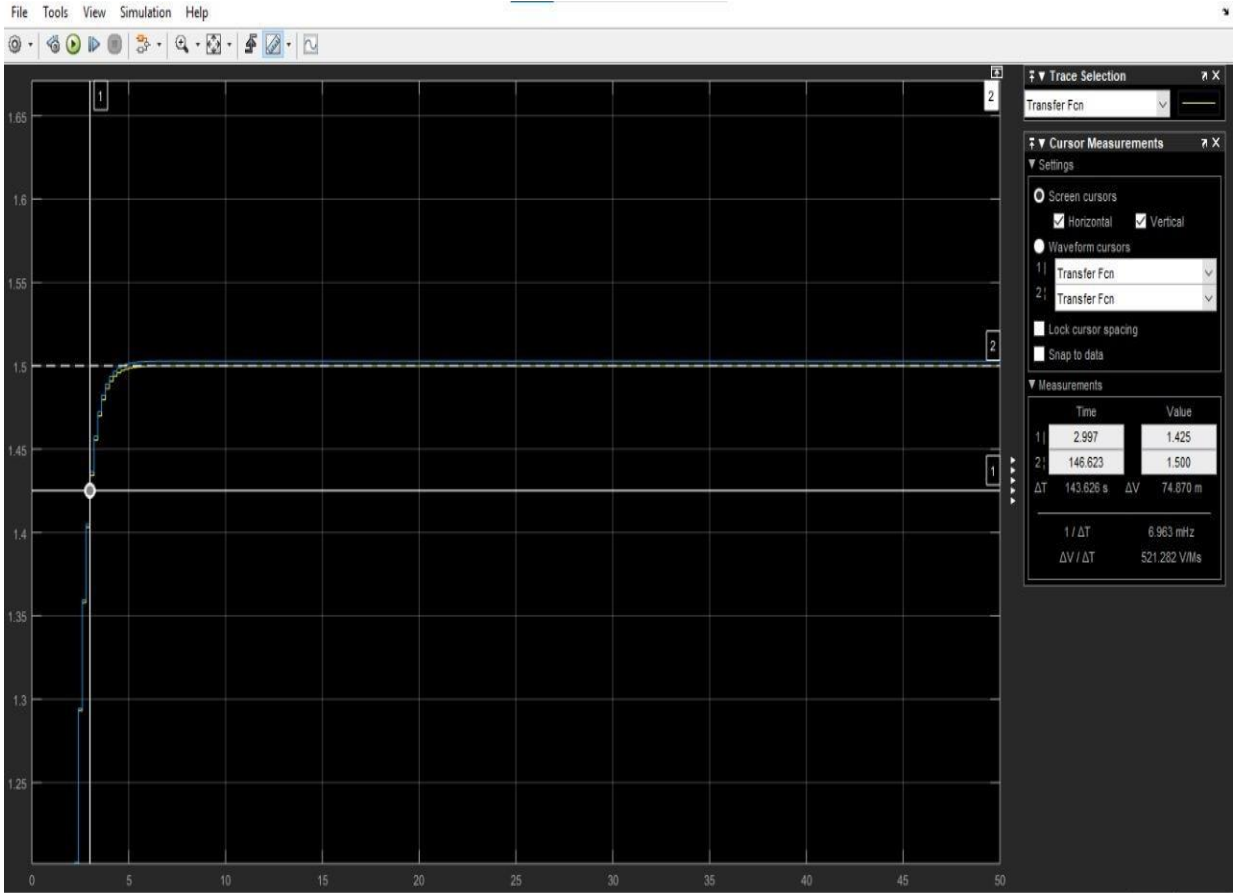
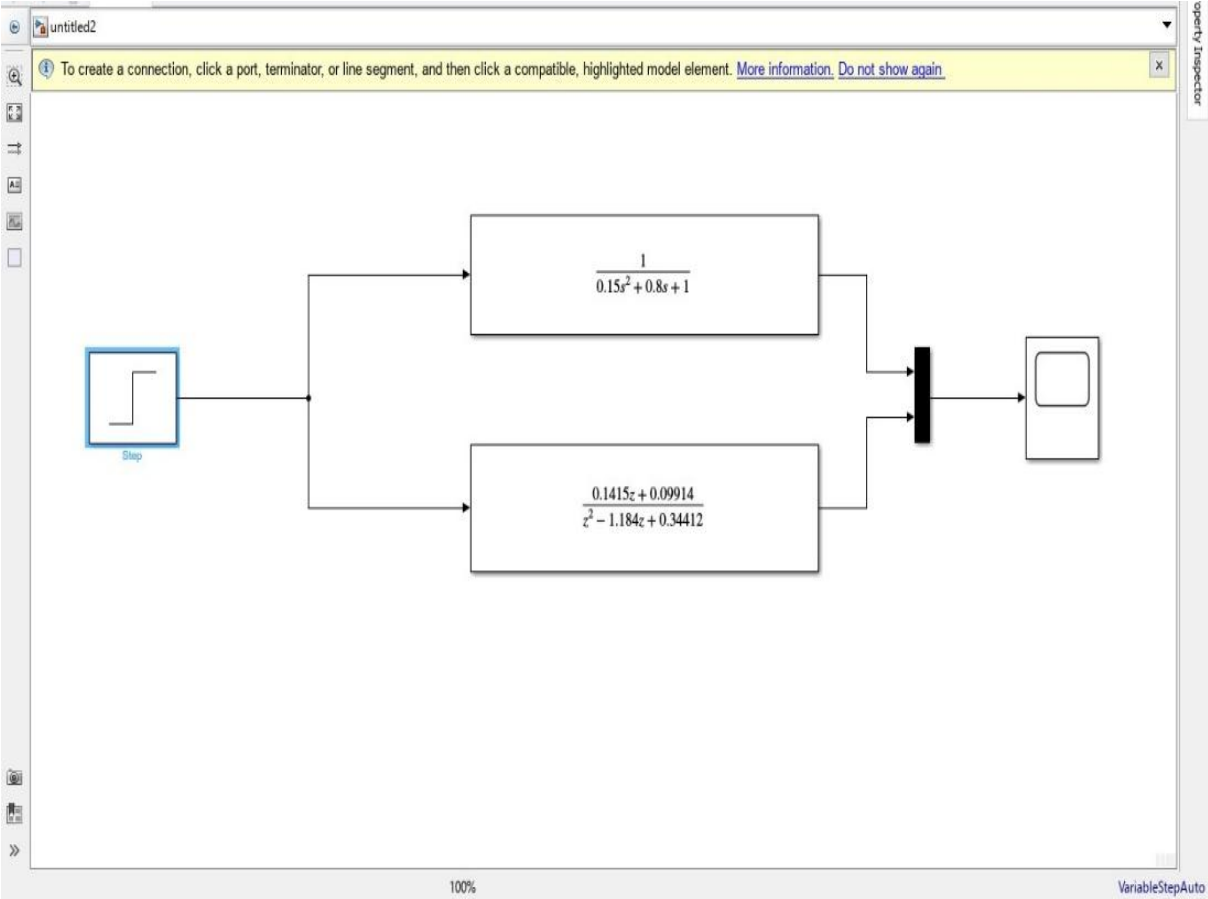
```
Numerator: {[0 0.1415 0.0991]}
Denominator: {[1 -1.1837 0.3442]}
Variable: 'z'
IODelay: [0]
InputDelay: [0]
OutputDelay: [0]
InputName: {' '}
InputUnit: {' '}
InputGroup: [1x1 struct]
OutputName: {' '}
OutputUnit: {' '}
OutputGroup: [1x1 struct]
Notes: [0x1 string]
UserData: []
Name: ''
Ts: [0.2000]
TimeUnit: 'seconds'
SamplingGrid: [1x1 struct]
```

 >>

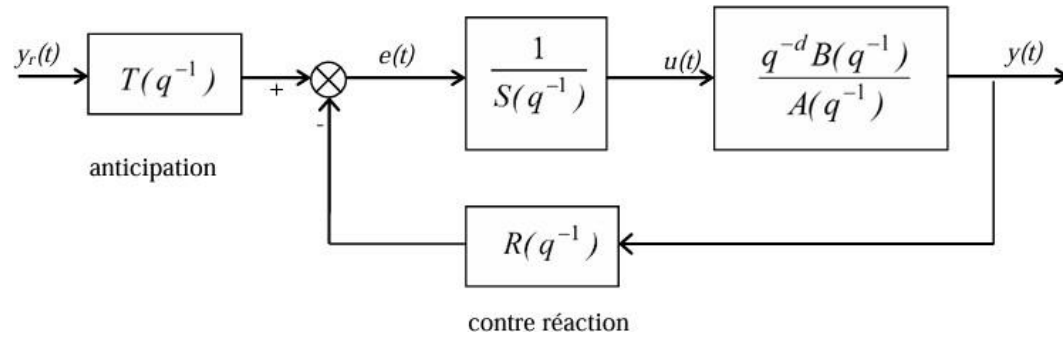


Cette figure montre une réponse indicielle (réponse à un échelon) d'un système dynamique

Simuler les réponses indicielles continue et discrète du système pour une entrée échelon unitaire, avec une durée suffisante pour atteindre le régime permanent.



Partie 2 : Etude du système en boucle fermée



MATLAB R2024a

HOME PLOTS APPS EDITOR PUBLISH VIEW

New Open Save Print Compare Go To Find Refactor Analyze Run Run and Advance Run Step Stop

FILE NAVIGATE CODE ANALYZE SECTION SECTION RUN

Current F... Editor - C:\Users\Lenovo\Downloads\untitled30980.m

```
1 % --- MATLAB Code as seen in the provided image ---
2
3 % Define matrix A
4 A = [1 0.1415 0;
5      -1.184 0.09914 0.1415;
6       0.3442 0 0.099];
7
8 % Define vector B
9 B = [-0.516;
10      0.3750;
11      0];
12
13 % Calculate X by solving A*X = B (X = inv(A)*B)
14 X = inv(A) * B;
15
16 % --- End of code ---
```

Workspace

- A
- B
- denominateu
- F
- FD
- numérateur
- out
- T
- Te
- X

Command Window

New to MATLAB? See resources for [Getting Started](#).

```
>> untitled30980
>> untitled30980
La solution du système est :
-0.3099
-1.4565
1.0775

Les résultats ont été enregistrés dans resultats.xlsx
>> untitled30980
>>
```

Zoom: 100% UTF-8 CRLF script Ln 16 Col 22

