

Quiz 4 : Systèmes non linéaires

Dénomination :

F : Système 1DDL avec friction (Dahl)

R : Système 1DDL Rigidifiant (Duffing)

A : Système 1DDL Assouplissant (Duffing)

L : Système 1DDL Linéaire

Systèmes d'équations et jeux de paramètres :

1 - $M\ddot{x} + C\dot{x} + Kx = F$
 $M=1 ; C=10 ; K=3948$

2 - $M\ddot{x} + C\dot{x} + Kx + K_3x^3 = F$
 $M=1 ; C=10 ; K=3948 ; K_3 = 78957$

3 - $M\ddot{x} + C\dot{x} + Kx + K_3x^3 = F$
 $M=1 ; C=10 ; K=7896 ; K_3 = -45795$

$$M\ddot{x} + C\dot{x} + Kx + \sigma z F_N = F$$

4 - $\dot{z} = \dot{x} - \frac{\sigma}{\mu} |\dot{x}| z$
 $M=1 ; C=10 ; K=3948 ; \sigma = 10 ; \mu=0.5 ; F_N = 400$

Dénomination	F	R	A	L
Système d'équations & Jeu de paramètre				

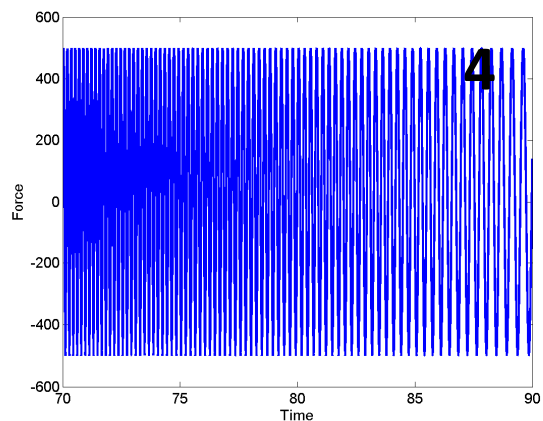
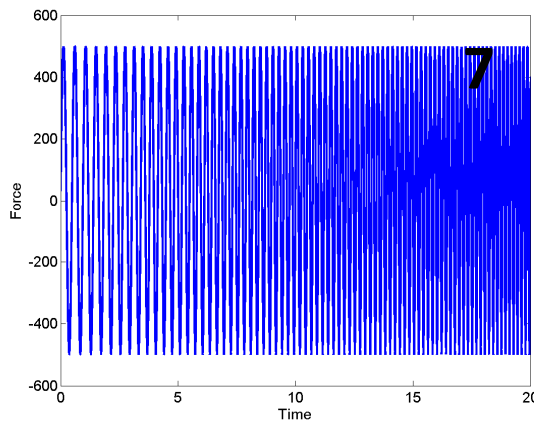
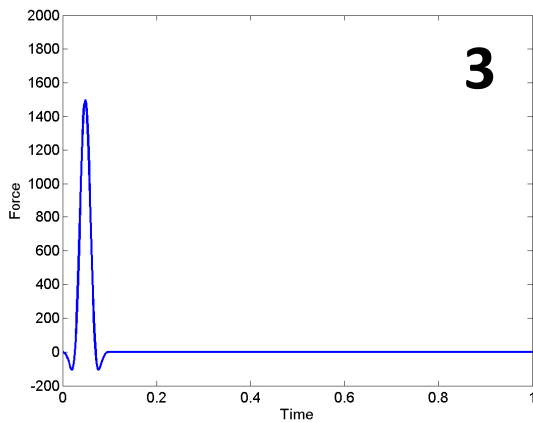
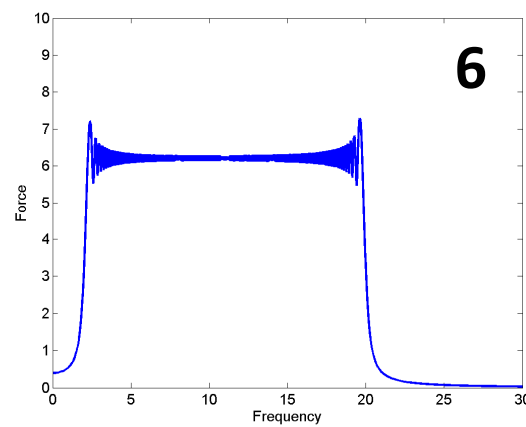
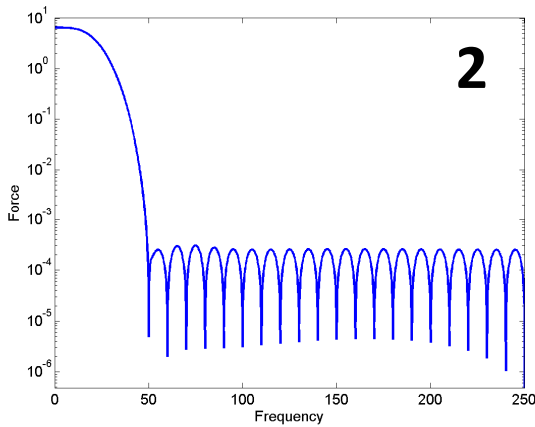
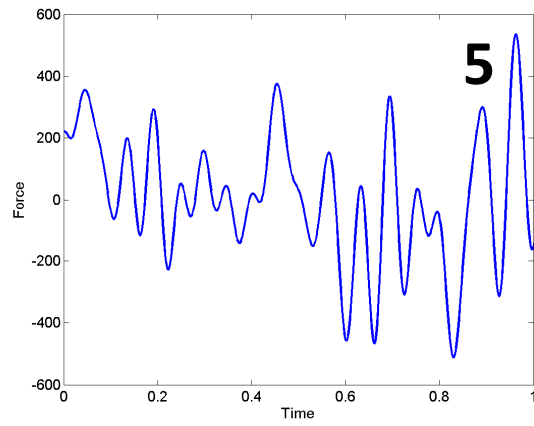
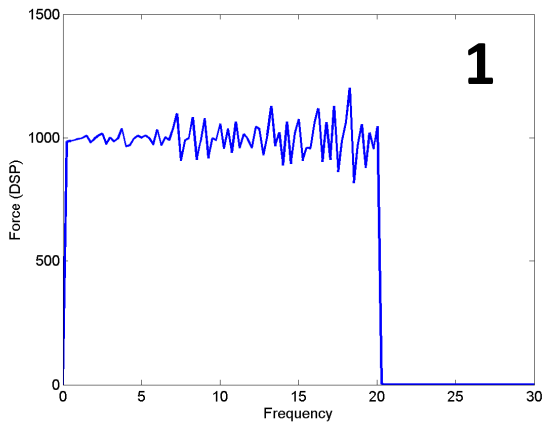
Type d'excitation (Force F) :

BC : excitation par Balayage sinus (sweep) Croissant 2->20Hz

EA : Excitation Aléatoire 0-20 Hz

BD : Excitation par Balayage sinus (sweep) Décroissant 20->2Hz

EC : excitation par Choc



Excitation	BC	BD	EA	EC
Représentation Temporelle				
Représentation Fréquentielle				

Systeme :

F : friction (Dahl) **R** : Rigidifiant (Duffing) **A** : Assouplissant (Duffing) **L** : Linéaire

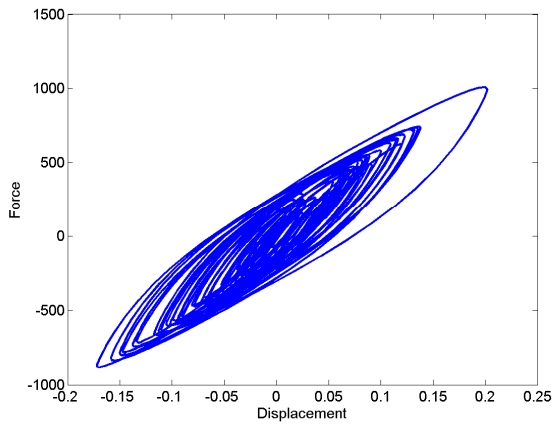
Excitation :

BS : Balayage sinus (sweep) 2<->20Hz

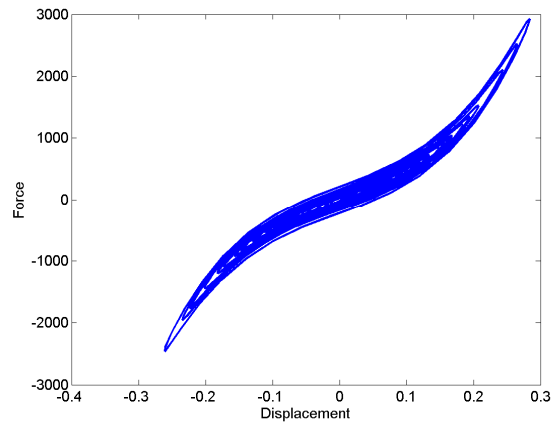
EA : Excitation Aléatoire 0-20 Hz

EC : excitation Choc

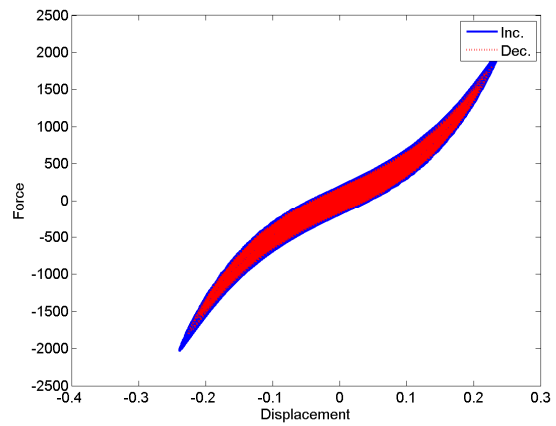
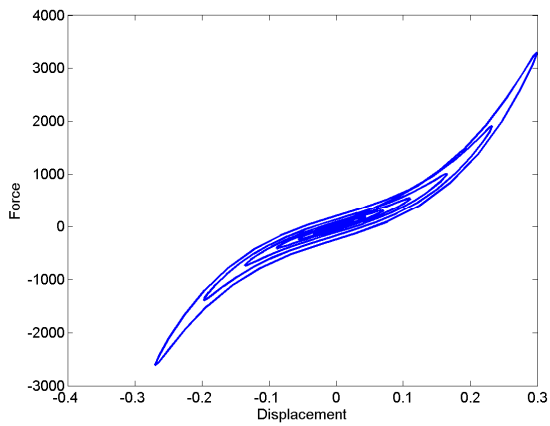
Forces de la liaison au référentiel (élastiques et dissipatives) en fonction du déplacement



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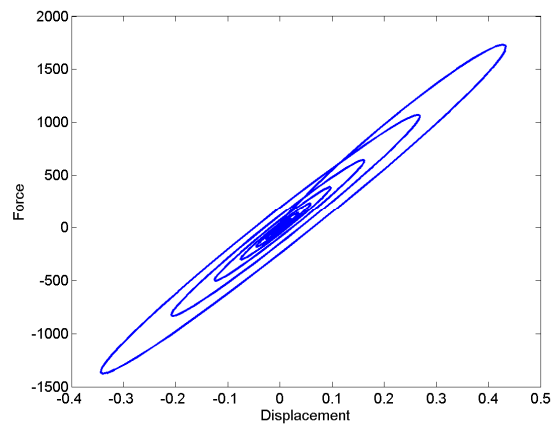
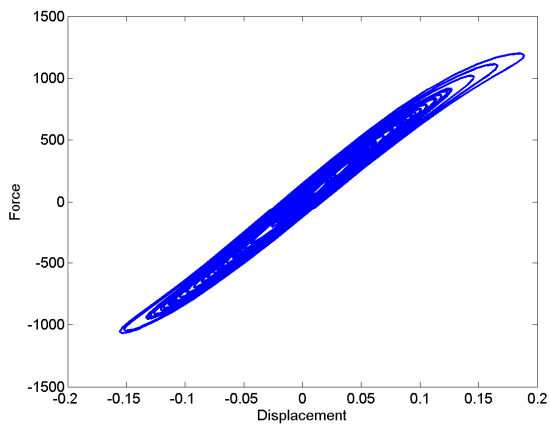


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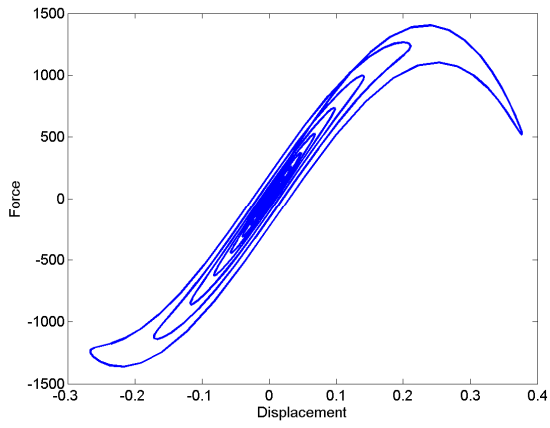
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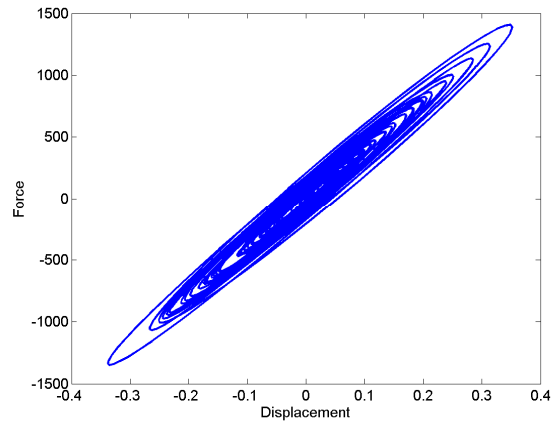
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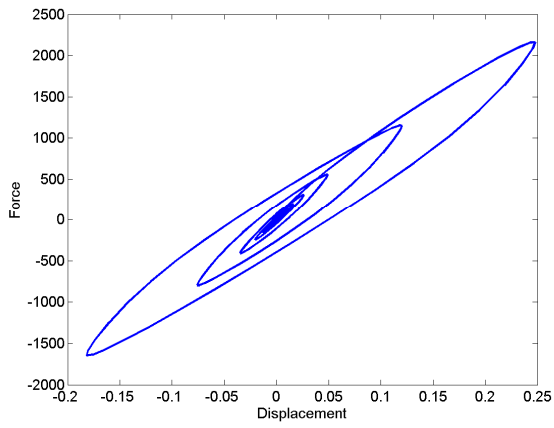
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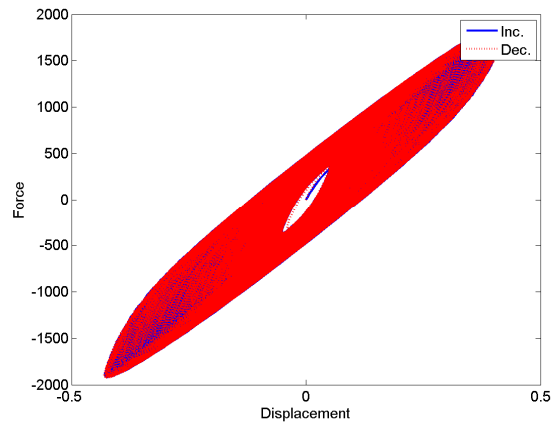
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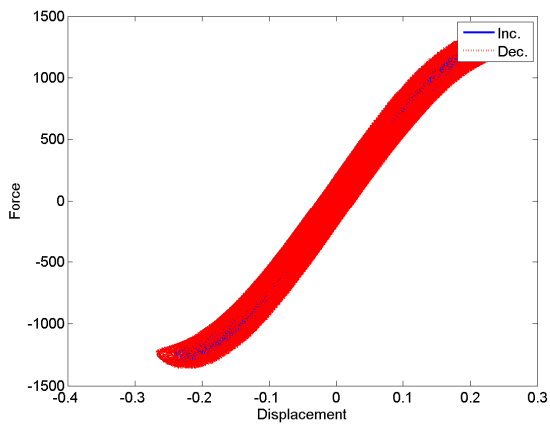
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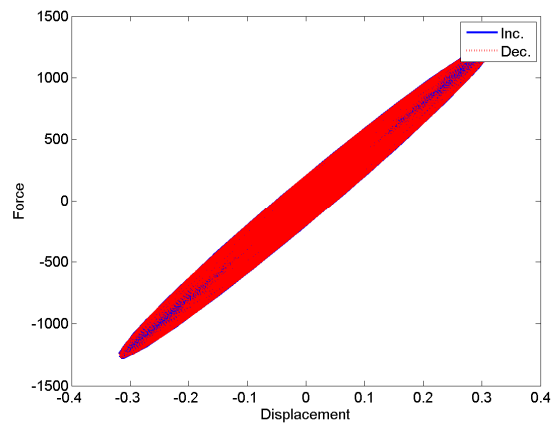
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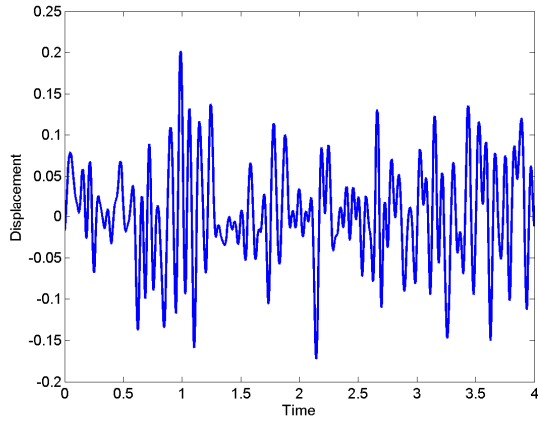


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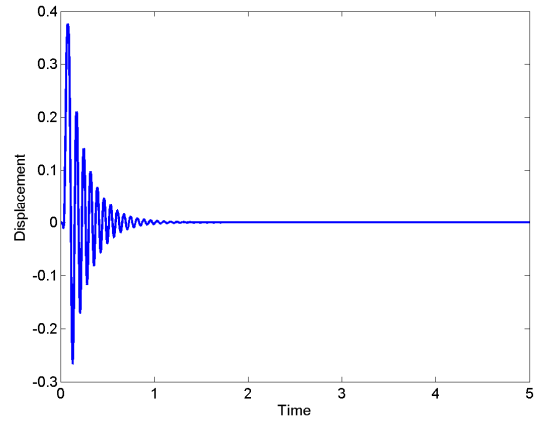


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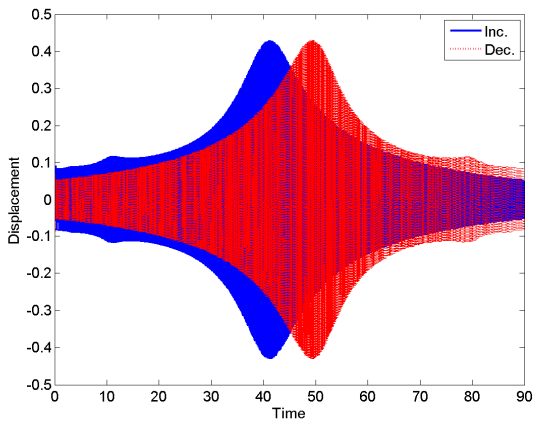
Réponses temporelles



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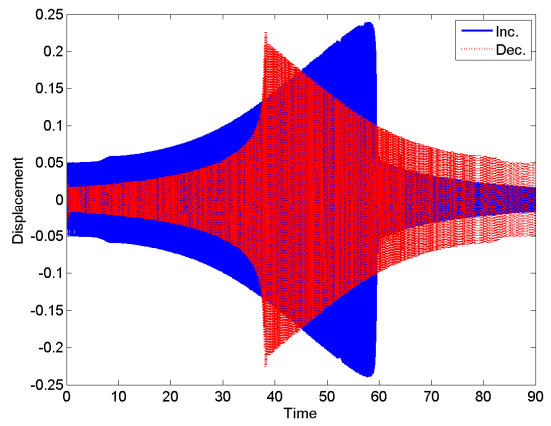


Exc :



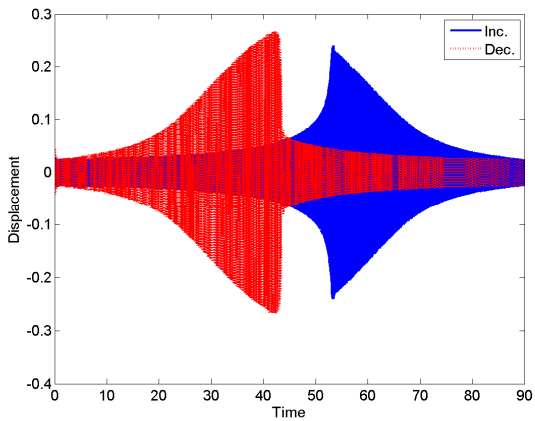
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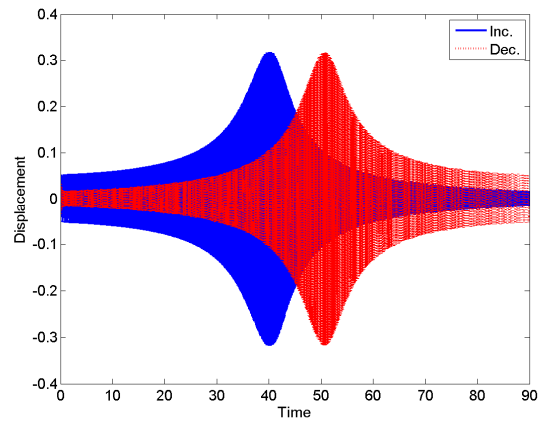
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Exc :



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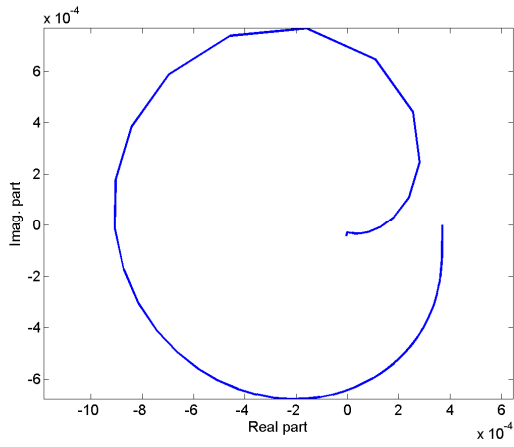
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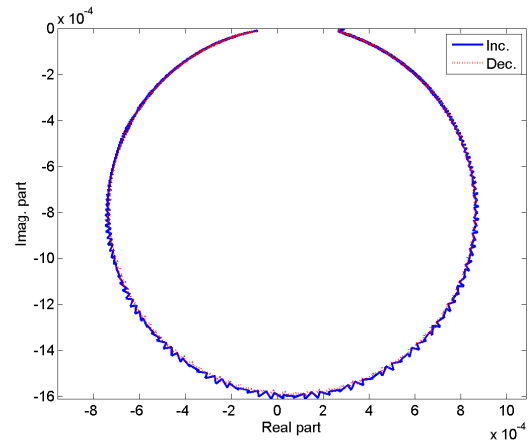
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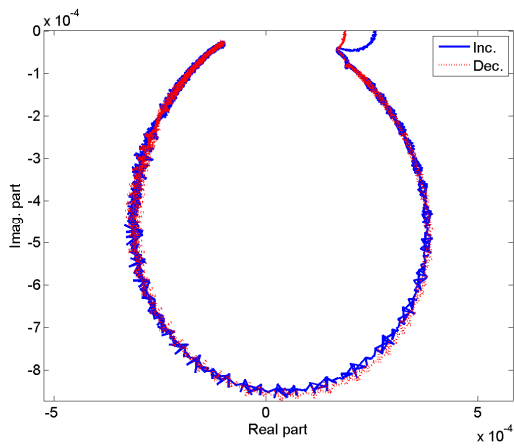
Diagrammes de Nyquist des fonctions de transfert estimées



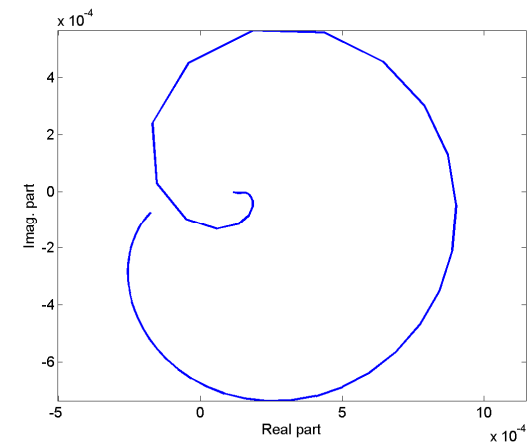
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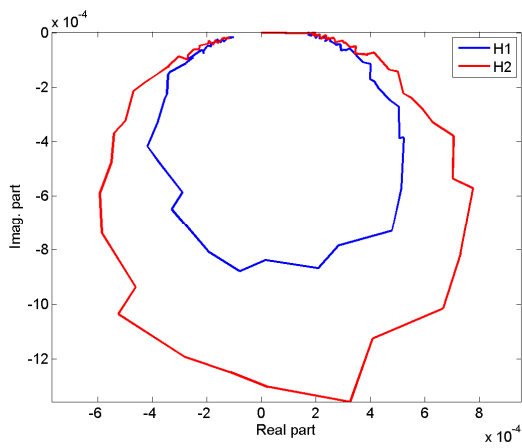
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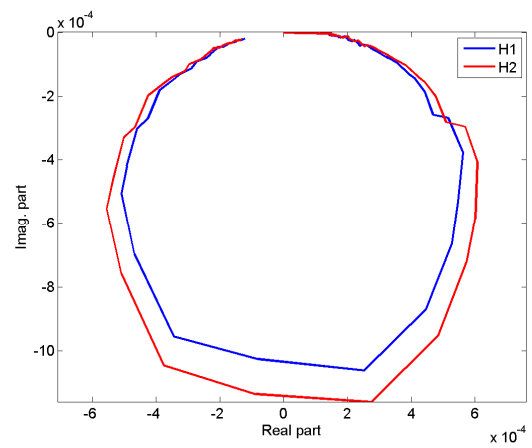
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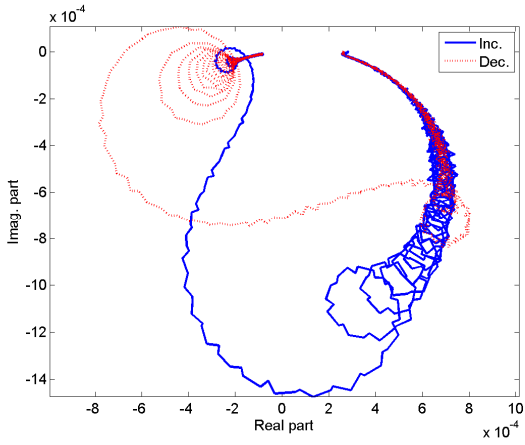


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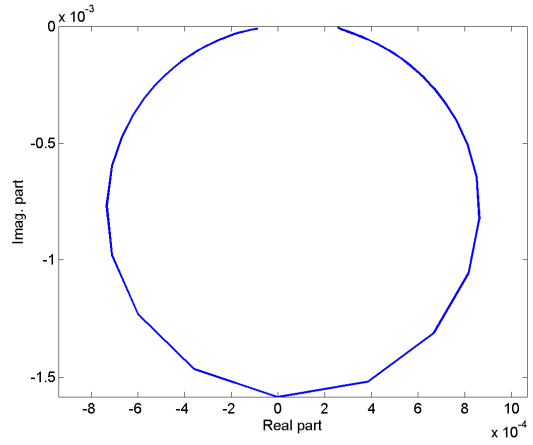


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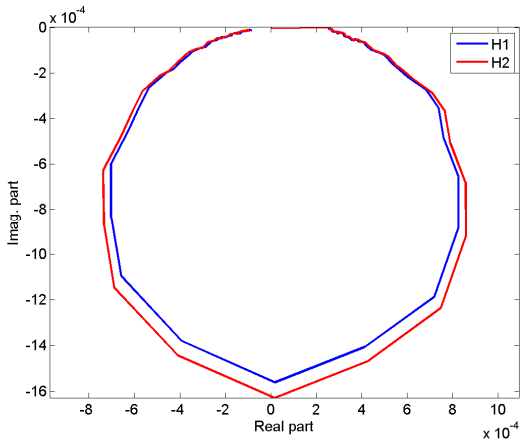
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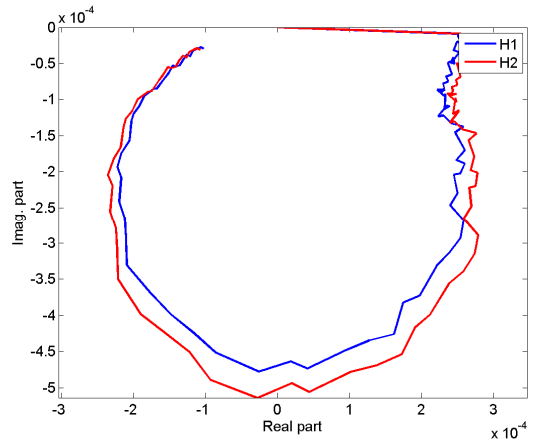
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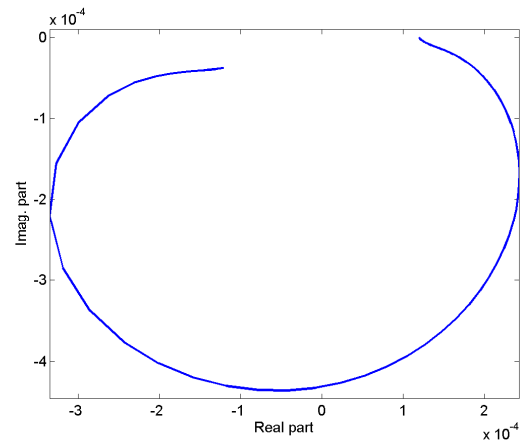
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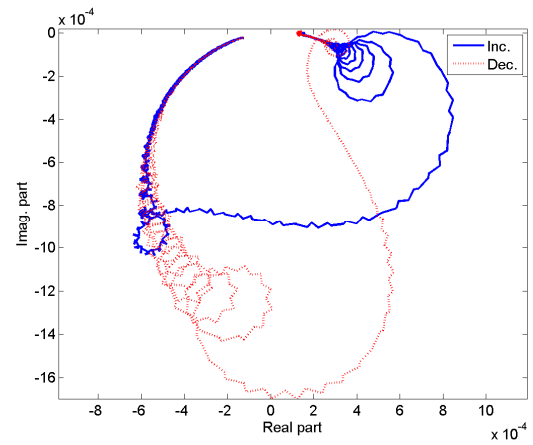
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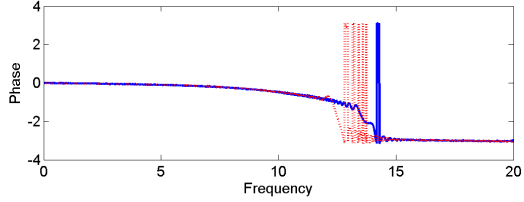
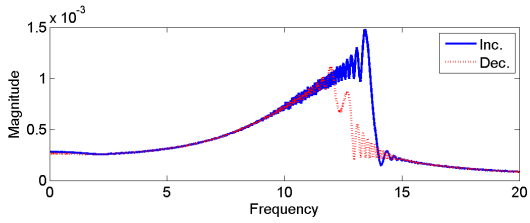


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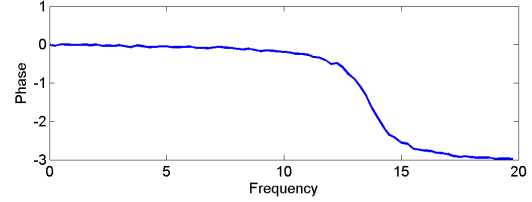
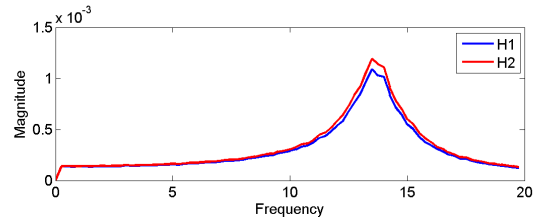


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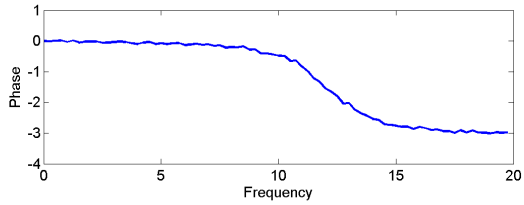
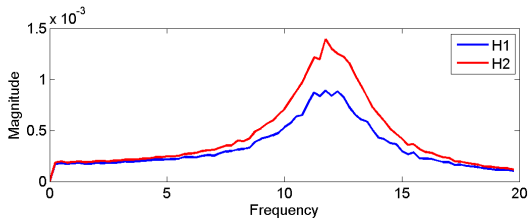
Fonctions de transfert estimées



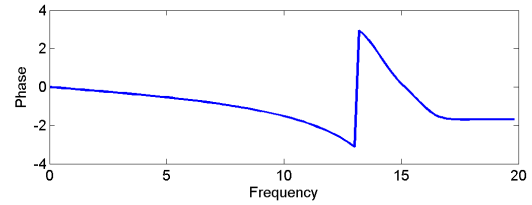
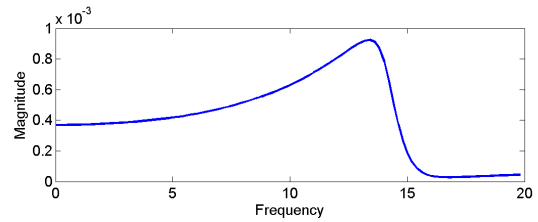
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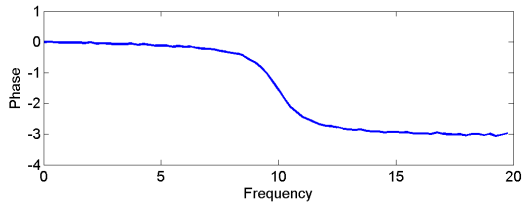
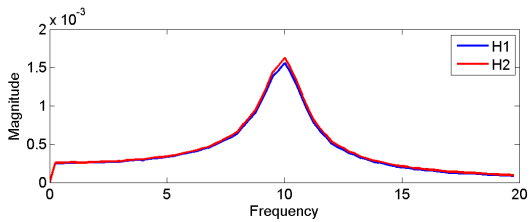
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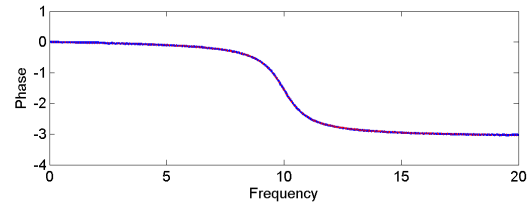
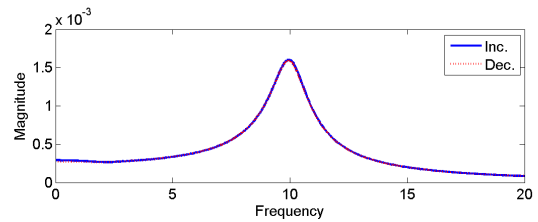
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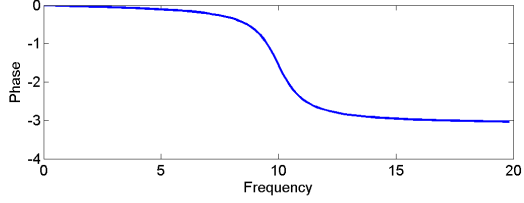
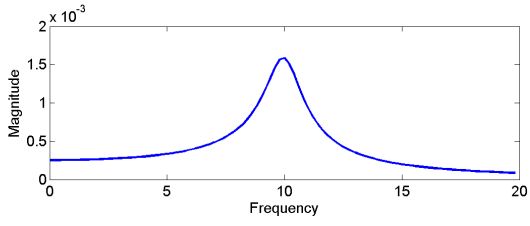


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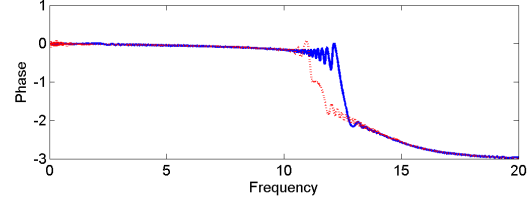
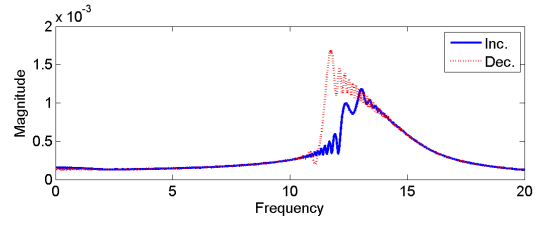


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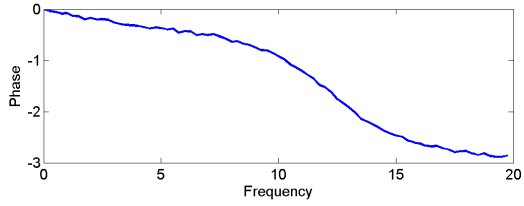
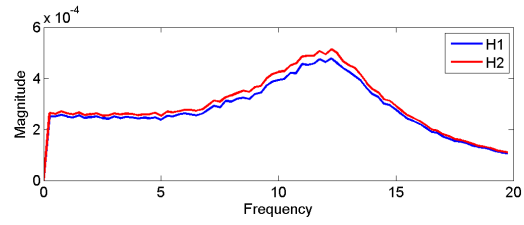
Fonctions de transfert estimées



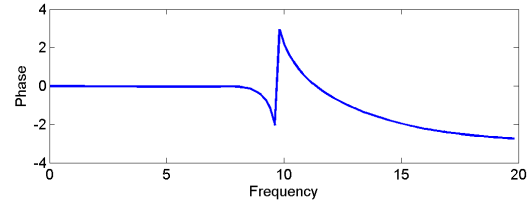
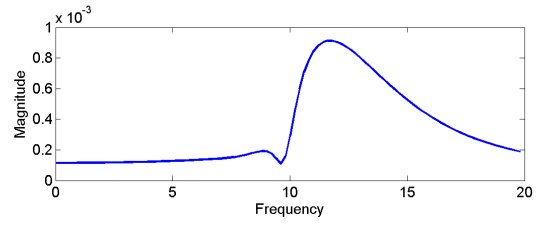
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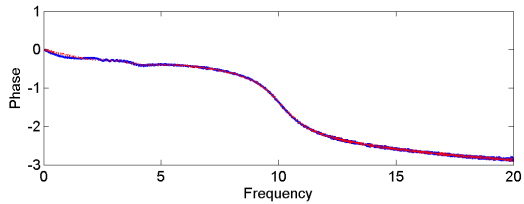
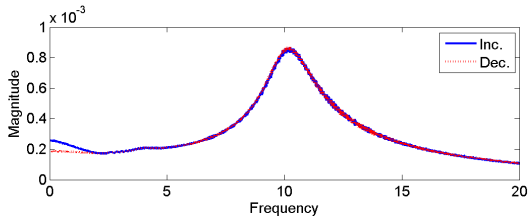
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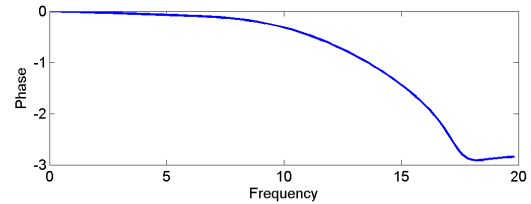
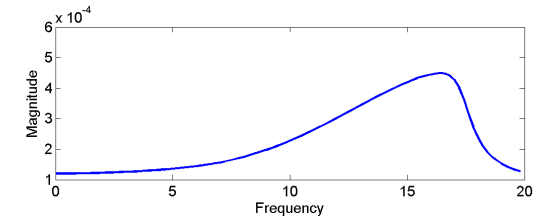
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