

Dynamique et contact

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Master 2 DSME - TACS

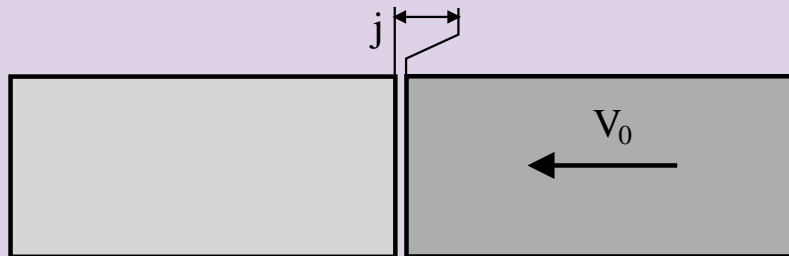
décembre 2004

- 1 Propagation d'ondes dans les barres
- 2 Ondes et fissures

1 Propagation d'ondes dans les barres

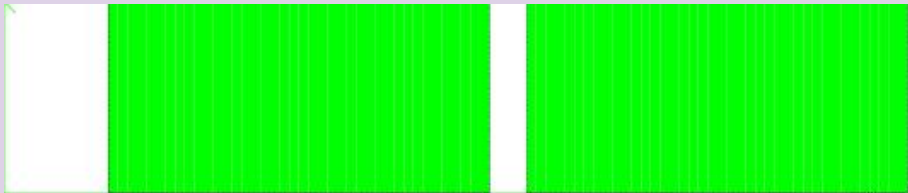
2 Ondes et fissures

Problème

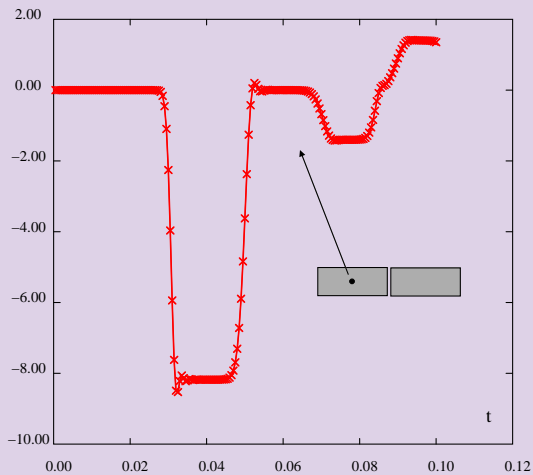


- Contact à vitesse non nulle
- Discontinuité de vitesse
- Accélération ?

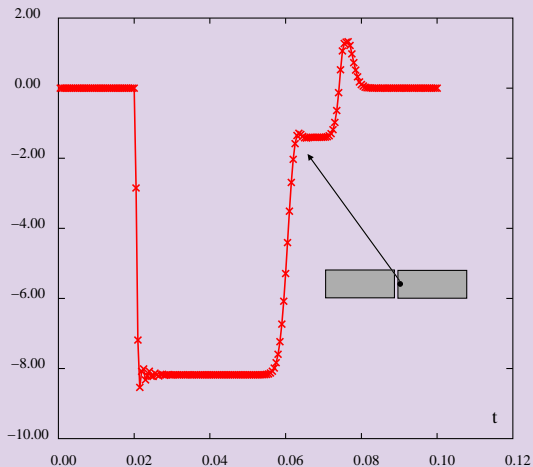
Choc



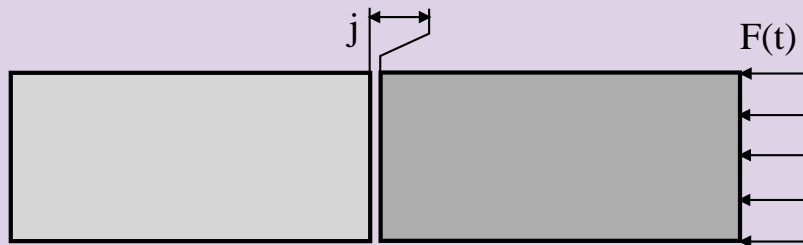
Signaux



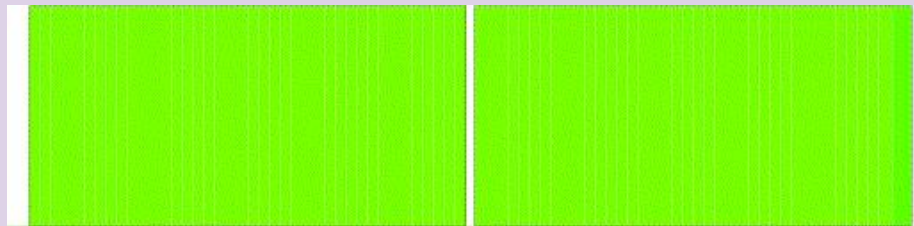
Signaux



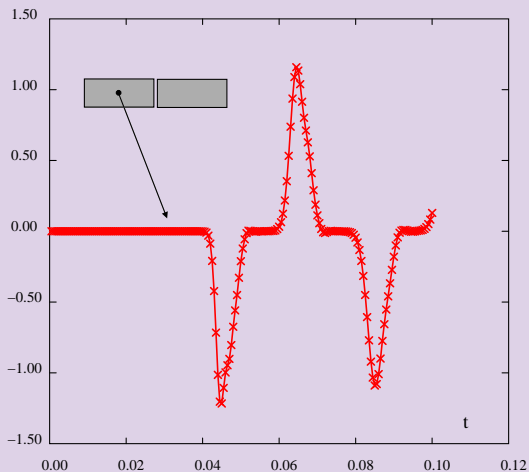
Problème



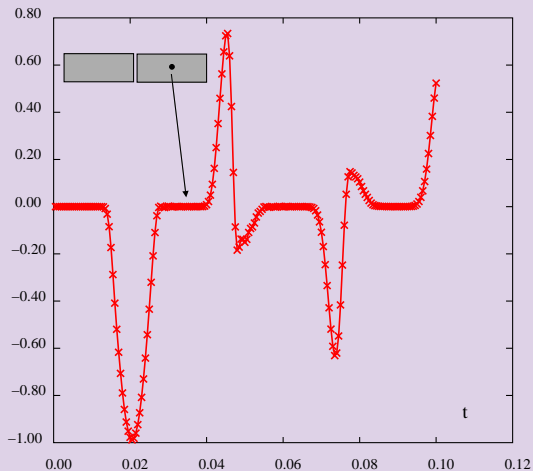
onde



Signaux



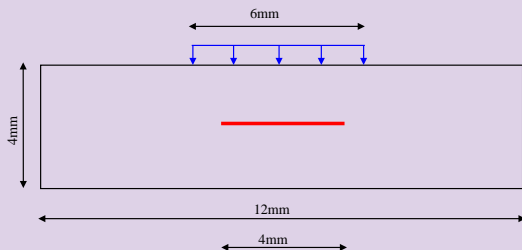
Signaux



1 Propagation d'ondes dans les barres

2 Ondes et fissures

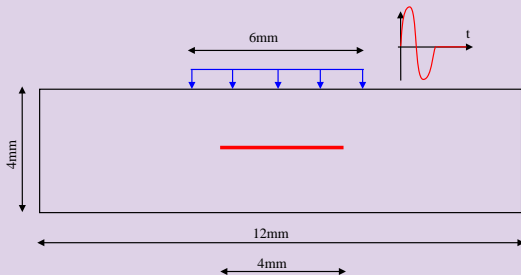
Problème



- Plaques acier
- Maillage : 9600 éléments linéaires - 19800 ddl
- Excitation 10MHz
- Temps d'étude $0.8\mu s$ - 400 pas de temps

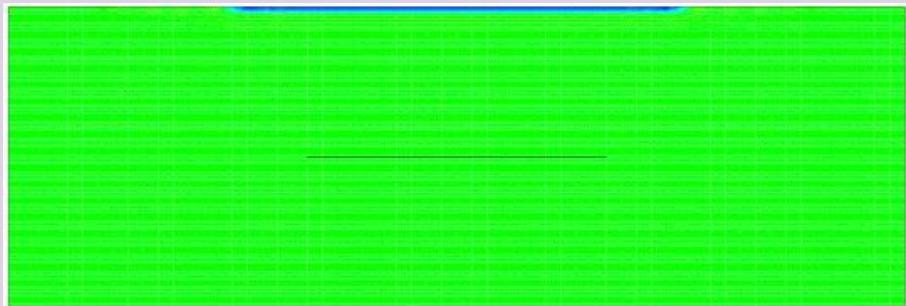
Fissure : 4mm

1 cycle sans contact



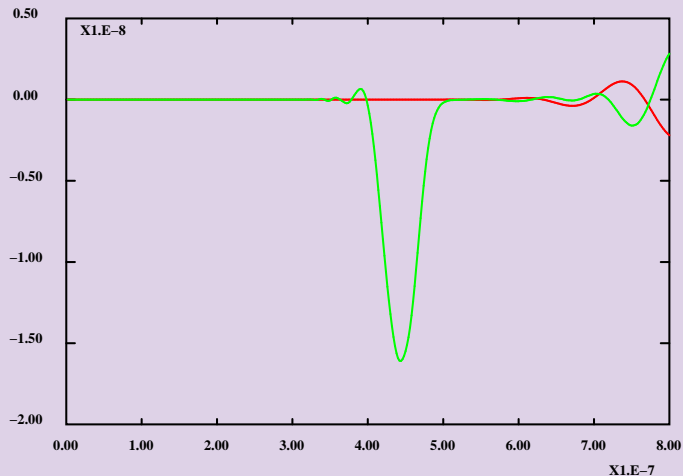
- Fissure ouverte
- Pas de conditions de contact sur la fissure
- Pénétration possible
- Signal : 1 cycle

1 cycle sans contact



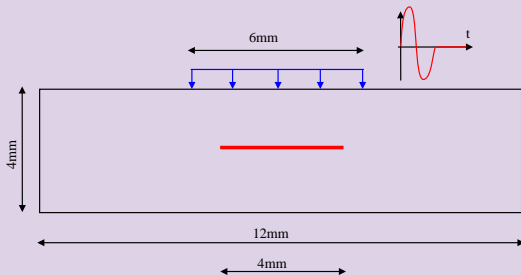
Fissure : 4mm

1 cycle sans contact



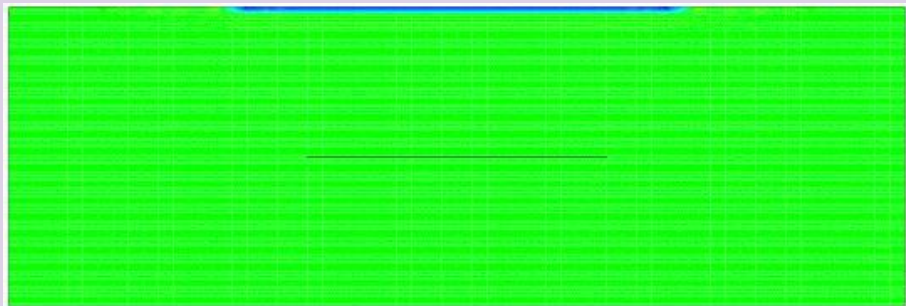
Fissure : 4mm

1 cycle avec contact



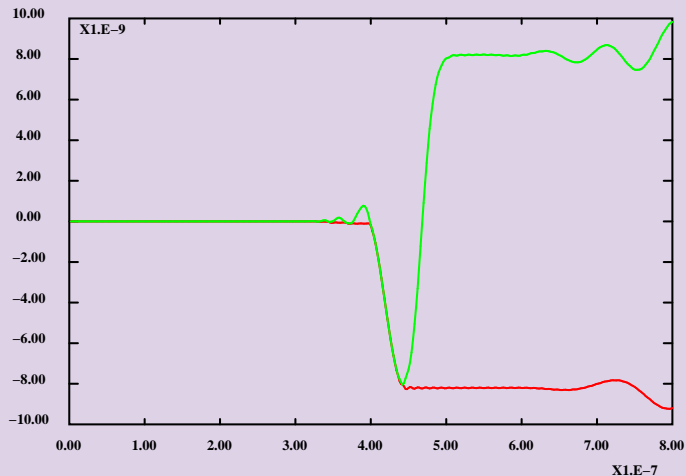
- Fissure fermée
- Conditions de contact sur la fissure
- Pénétration impossible
- Signal : 1 cycle

1 cycle avec contact



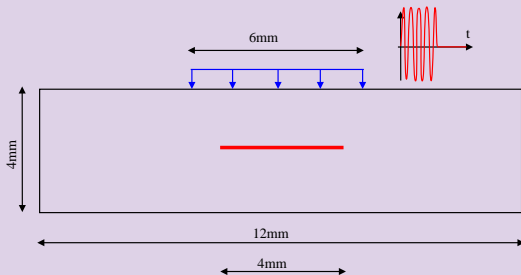
Fissure : 4mm

1 cycle avec contact



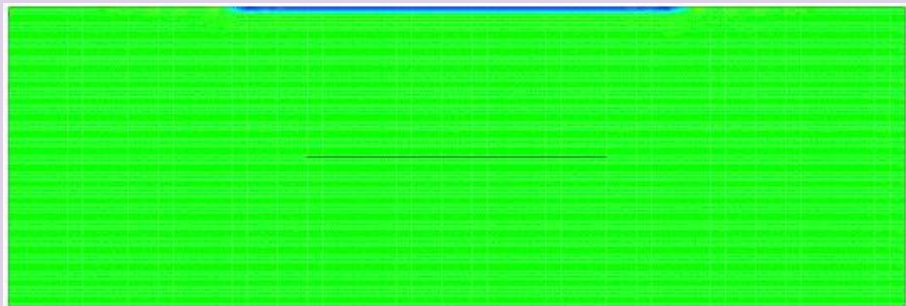
Fissure : 4mm

4 cycles avec contact



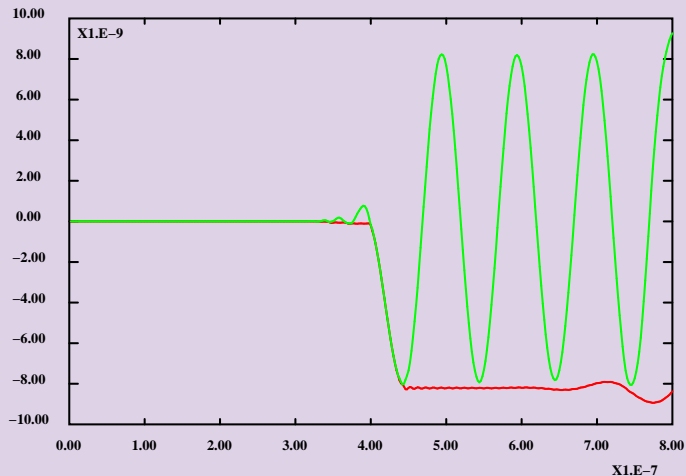
- Fissure fermée
- Conditions de contact sur la fissure
- Pénétration impossible
- Signal : 4 cycles

4 cycles avec contact

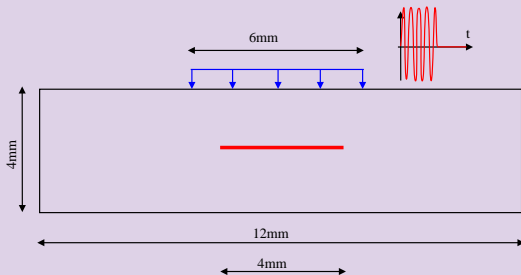


Fissure : 4mm

4 cycles avec contact

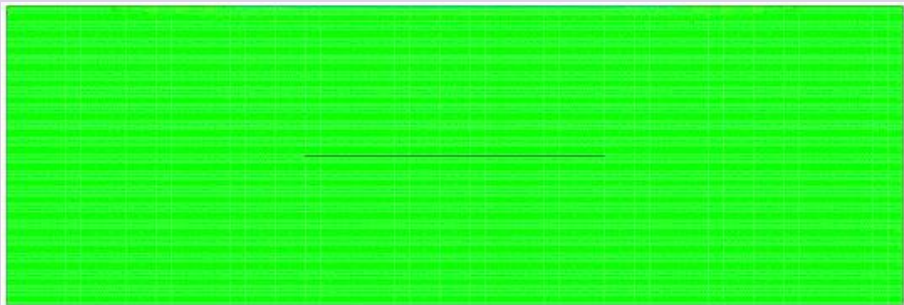


4 cycles Gauss avec contact



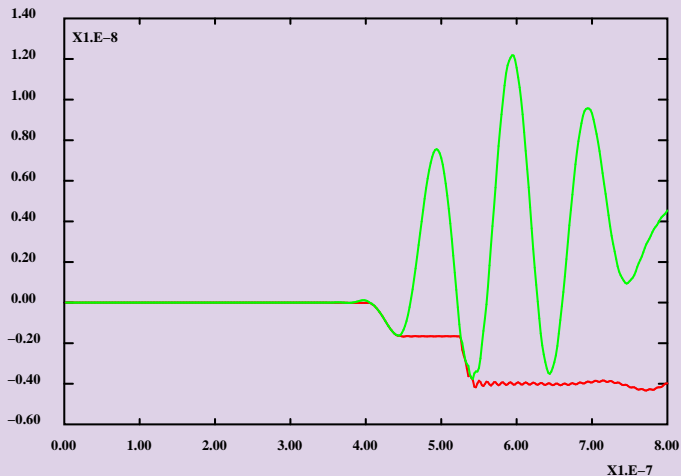
- Fissure fermée
- Conditions de contact sur la fissure
- Pénétration impossible
- Signal : 4 cycles, enveloppe gaussienne

4 cycles Gauss avec contact



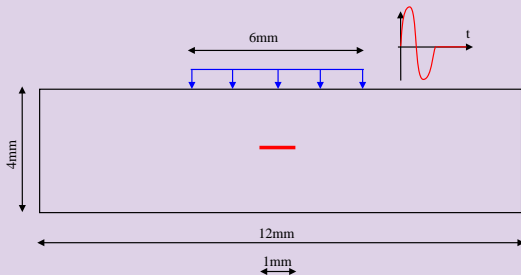
Fissure : 4mm

4 cycles Gauss avec contact



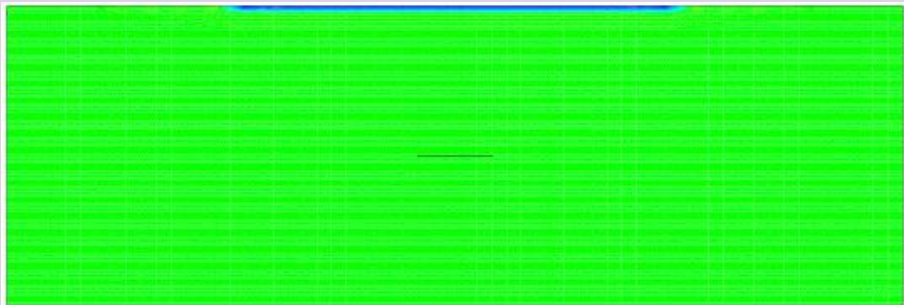
Fissure : 1mm

1 cycle sans contact



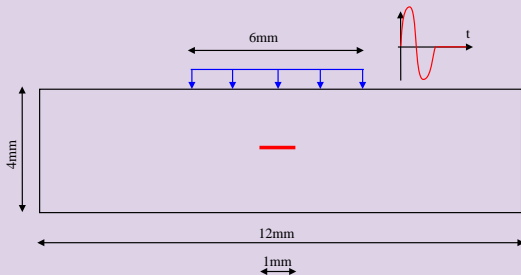
- Fissure ouverte
- Pas de conditions de contact sur la fissure
- Pénétration possible
- Signal : 1 cycle

1 cycle sans contact



Fissure : 1mm

1 cycle avec contact



- Fissure fermée
- Conditions de contact sur la fissure
- Pénétration impossible
- Signal : 1 cycle

1 cycle avec contact

