

()

()

*

(// , // , //)

()

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()

()

[]

[,]
(Convective) -

(Impulsive) -

()

()

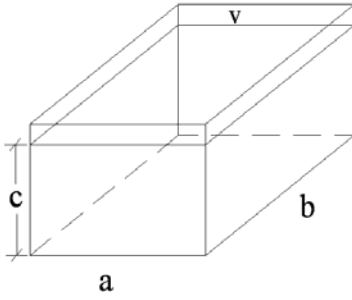


[]

()

[,]

()



[]

a

:

:

| | Tank-1 | Tank-4 |
|-------|--------|--------|
| a(m) | | |
| b(m) | | |
| c(m) | | |
| t(cm) | | |

Fluid 80

Ansys

Beam

3,

Shell63

[]

* N/m²

/

*

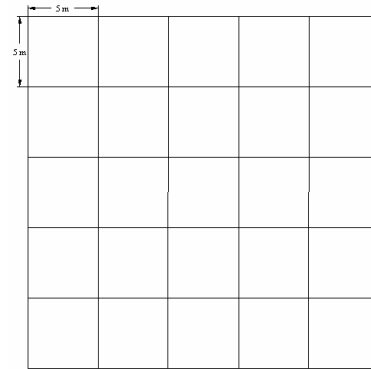
N/m²

(β)

kg/m³

kg/m³

()



()

)

(

(Tank-2 Tank-1)

)

()

(Ansys)
)
c

(

) (compressive)

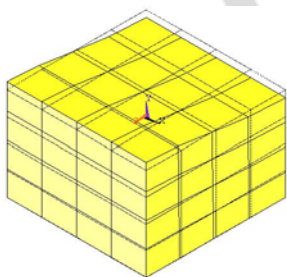
()

() (sloshing)

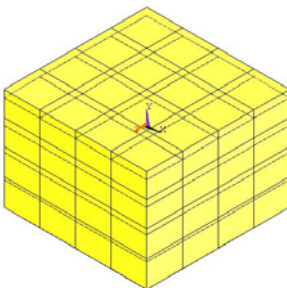
| | Tank-1 | Tank-2 |
|---------------|--------|--------|
| f sloshing | / | / |
| f compressive | / | / |
| f Impulsive | / | / |

(sloshing)

)



(Compressive)



(Sloshing)

()

(c)

($T_0 = /$)

($I =$) /

()
(R)

($A = /$) /

(

(R=)

()

(cm kgf/m^2) composite

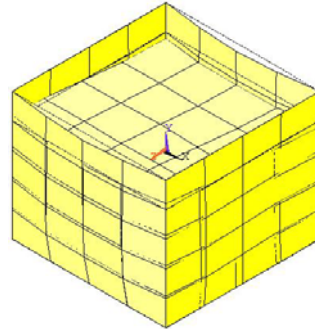
()

()

(Impulsive)

()

| | | (sec) | | |
|---------|---|-------|------|------|
|) | 1 | 0.85 | 0.84 | 0.84 |
| | 2 | 0.25 | 0.1 | 0.94 |
| + Tank1 | 1 | 1.2 | 0.11 | 0.11 |
| | 2 | 0.86 | 0.73 | 0.84 |
| | 3 | 0.26 | 0.11 | 0.95 |
| + Tank4 | 1 | 2.5 | 0.2 | 0.2 |
| | 2 | 0.92 | 0.68 | 0.88 |
| | 3 | 0.27 | 0.09 | 0.97 |



(impulsive)

()

W

$$V = CW$$

B

C

$$C = \frac{ABI}{R}$$

)

()

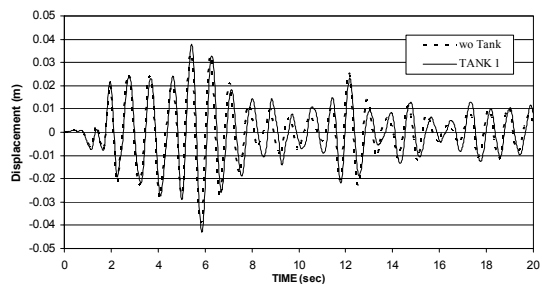
(

()

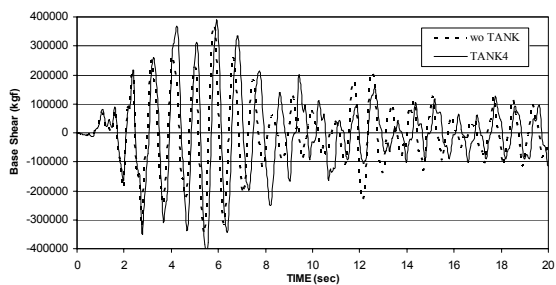
)

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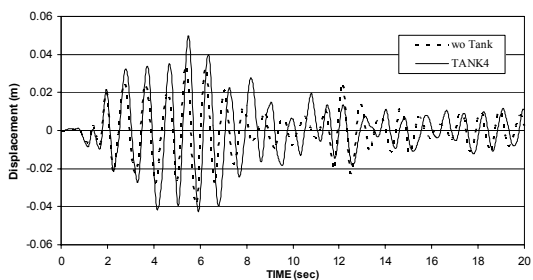
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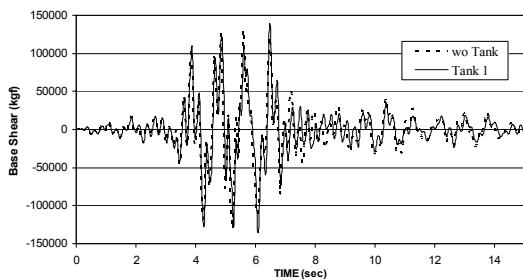
(Tank-1)



(Tank-4)



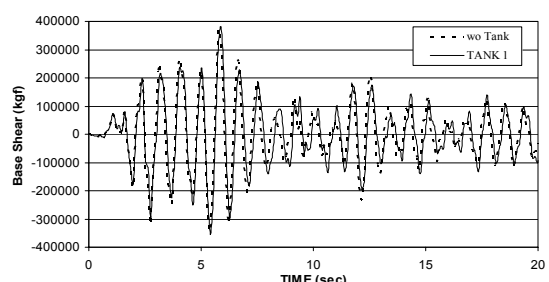
(Tank-4)



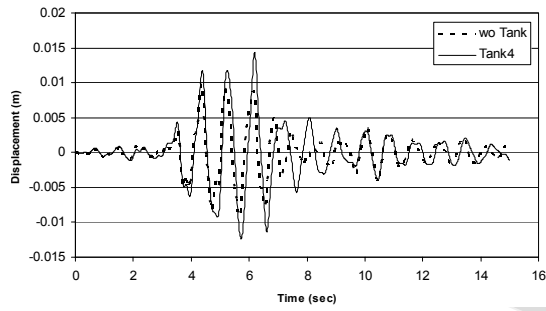
(Tank-1)

()
)
(
()
()

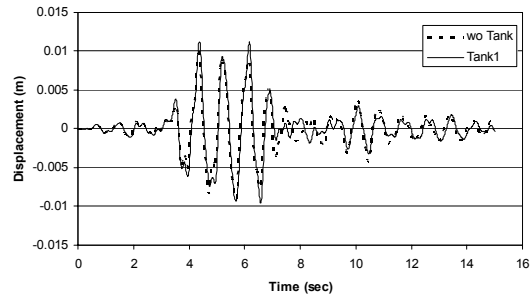
دانشگاه



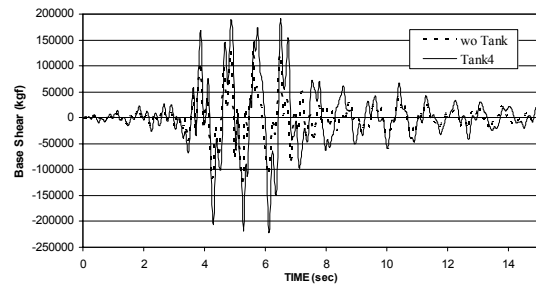
(Tank-1)



(Tank-4)



(Tank-1)



(Tank-4)

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