

자동차 엔진마운트의 온도에 따른 동특성 변화 해석 Analysis on the Dynamic characteristics to Temperature of Automotive Engine Mount.

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1. $\sigma = E_{\epsilon}^* = E(1 + i\eta)\epsilon$ f
 가 ϵ . SBR

[2] ϵ . SBR
 Table 1

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 (Monte Carlo Simulation)

2007

3

2. SBR

MSC/NASTRAN

. SBR

Poisson

1080kg/m³

0.49

NASTRAN

(SOL108)

가

SBR

Figure 1

가

1000

Figure 2

4

(1)

$$\sigma = E_{\epsilon}^* = E(1 + i\eta)\epsilon$$

$$E^* = \frac{a_0 + a_1 (if)^{\beta}}{1 + c_1 (if)^{\beta}} \quad (1)$$

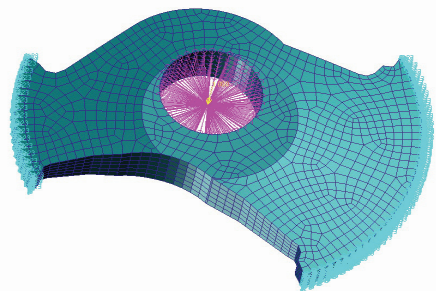


Figure 1 FE model of an automotive engine mount

†

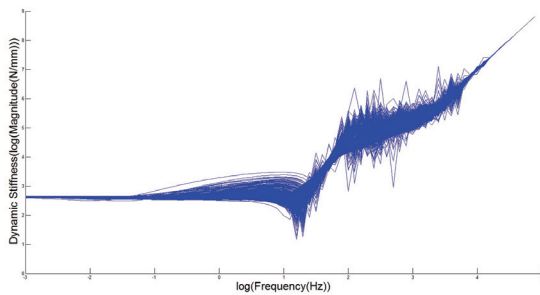
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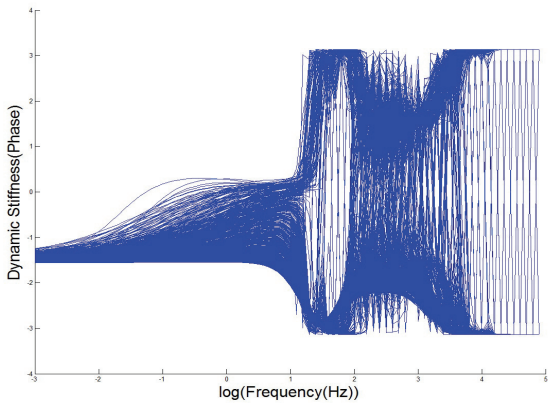
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Table 1 Statistical Properties of Random Variables

Random Variables	Mean(Jone,2001)	Standard Deviation
Temp()	13.28	9.79
log(σ)	-1.118	1.265
log(σ)	log(14.50(1+i0.05))	0.2155
log(σ)	log(196.7(1+i0.018))	0.06047
log(c_1)	log(0.0083)	0.06047
	0.38	0.06780
(σ , c_1)	0.6948	-



(a) Magnitude



(b) Phase

Figure 2 Variability of dynamic stiffness in an engine mount due to temperature variation.

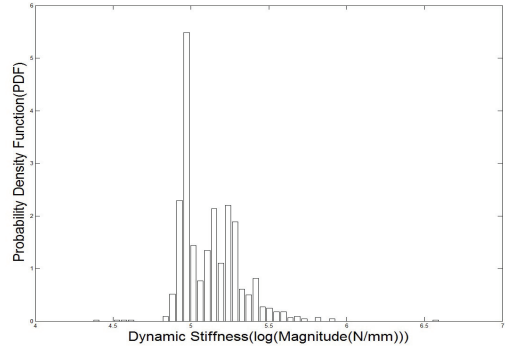


Figure 3 Histogram of the dynamic stiffness magnitude at 1000Hz.

3.

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(2010-0023464)

(1) Jones, D.I.G (2001) Handbook of viscoelastic vibration Damping, John Wiley & Sons, New York.

(2) (2) , (2011)

, 24 4 , pp. 383-389.

1000Hz

Figure 3