Identification for Mooney model: α gel, θ-8, V=1.25

Japan Association for Nonlinear CAE

ADINA

Mooney model

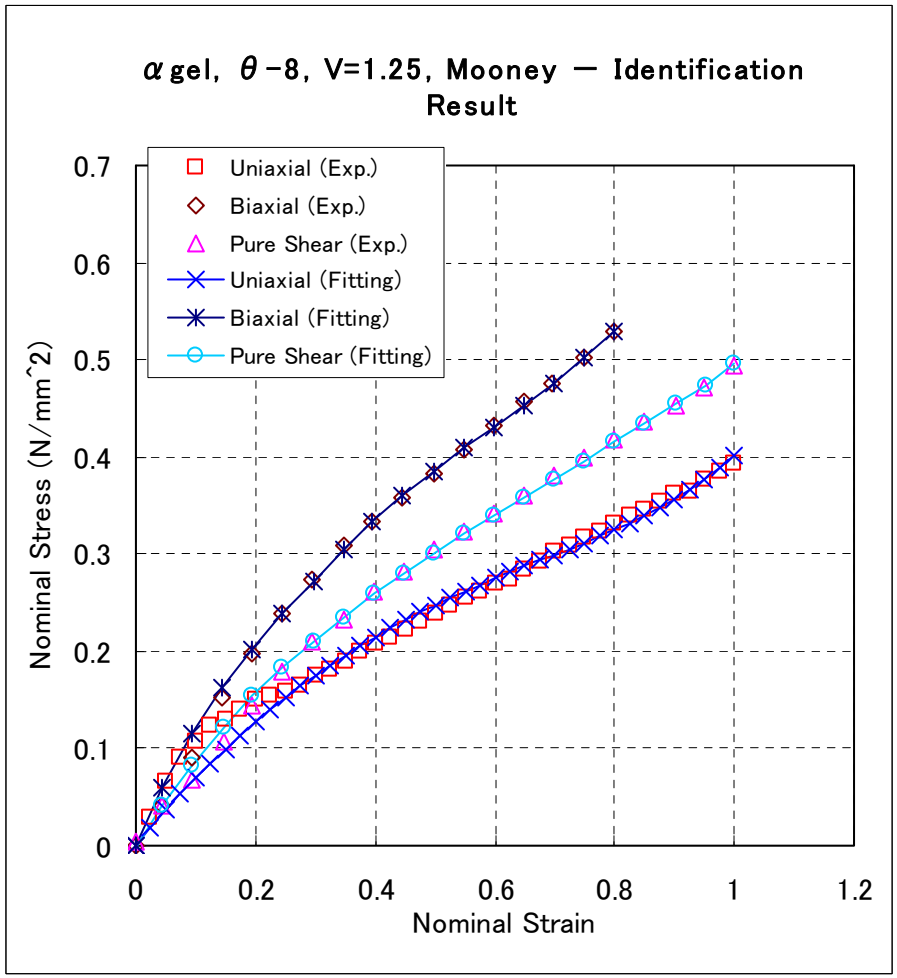
$$W = \sum_{m=1}^{N}\sum_{n=1}^{N} C_{mn}(I_1 - 3)^m (I_2 - 3)^n$$

Rate of Loading in Tension Test(s)

1.25 mm/s

Coefficient

Coefficient	
C10 (C1)	1.28E-01
C01 (C2)	-1.18E-03
C20 (C3)	-5.03E-02
C11 (C4)	7.18E-02
C02 (C5)	-2.33E-02
C30 (C6)	1.64E-02
C21 (C7)	-2.76E-02
C12 (C8)	1.40E-02
C03 (C9)	-1.95E-03
C40 (C10)	



Identification result:
Stress-strain relationship

Analysis with Mooney model: α gel, θ-8, V=1.25

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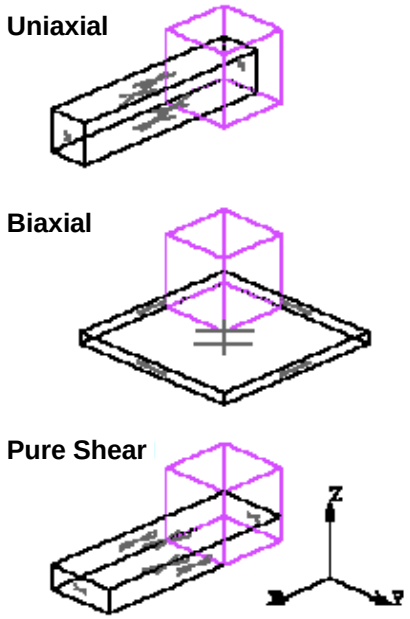
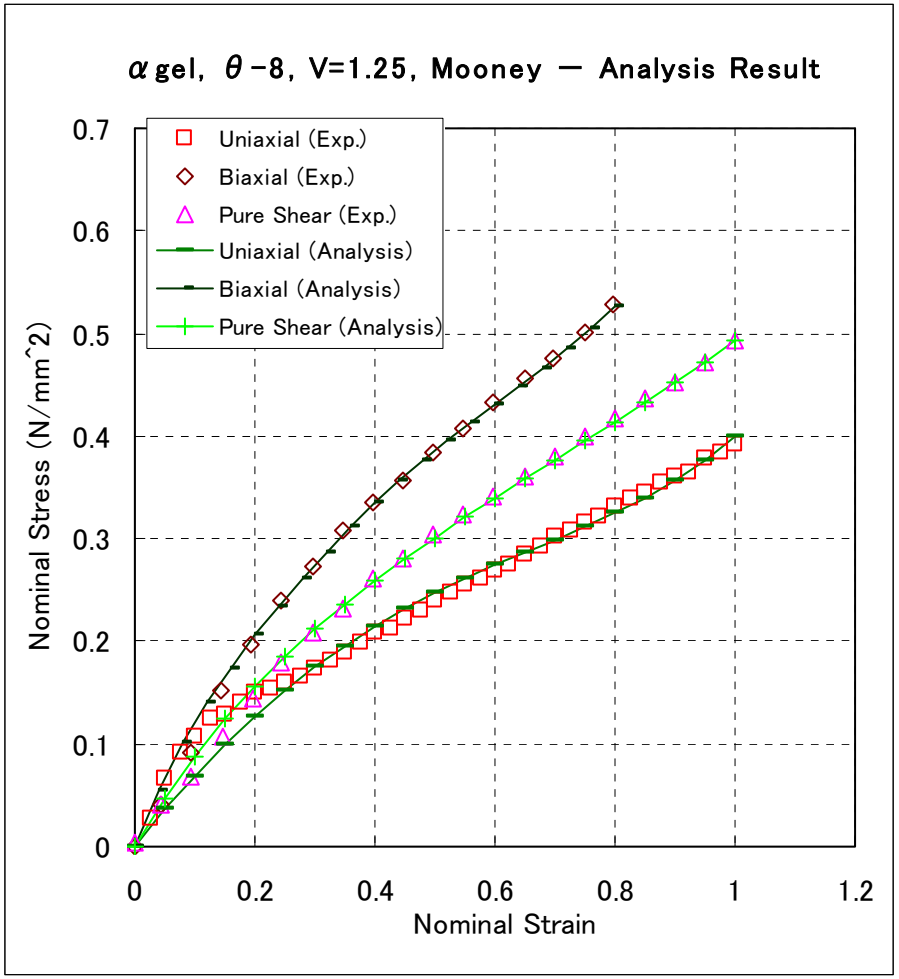
Input File: gel8_v1_25_uni_m.in
gel8_v1_25_shear_m.in
gel8_v1_25_bi_m.in



Analysis model



Analysis result:
Stress-strain relationship

Identification for Odgen model: α gel, θ-8, V=1.25

Japan Association for Nonlinear CAE

ADINA

Mooney model

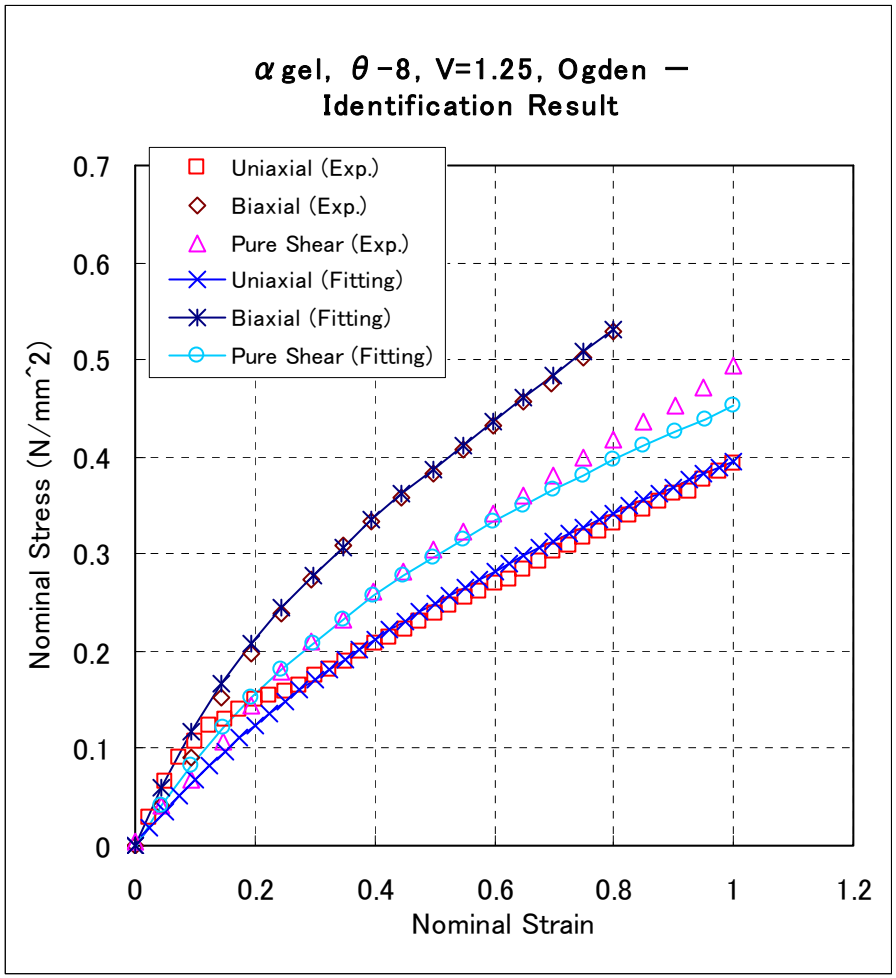
$$W = \sum_{n=1}^{N} \frac{\mu_n}{\alpha_n}\left[\left(\lambda_1^{\alpha_n} + \lambda_2^{\alpha_n} + \lambda_3^{\alpha_n}\right) - 3\right]$$

Rate of Loading in Tension Test(s)

1.25 mm/s

Coefficient

Coefficient		
Order	μ	α
1	-2.50E-02	-2.00000
2	1.02E-01	1.00000
3	1.75E-01	2.00000
4		



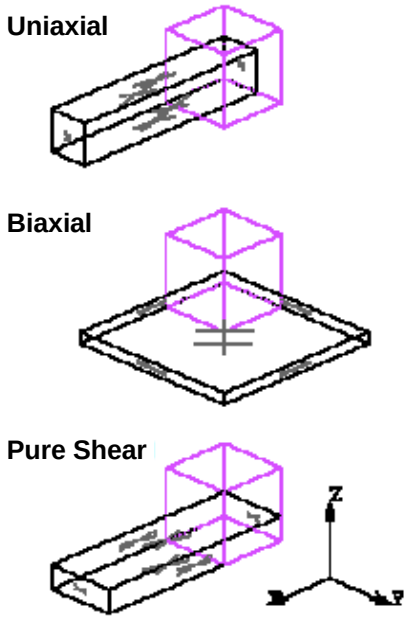
Identification result:
Stress-strain relationship

Analysis with Odgen model: α gel, θ-8, V=1.25

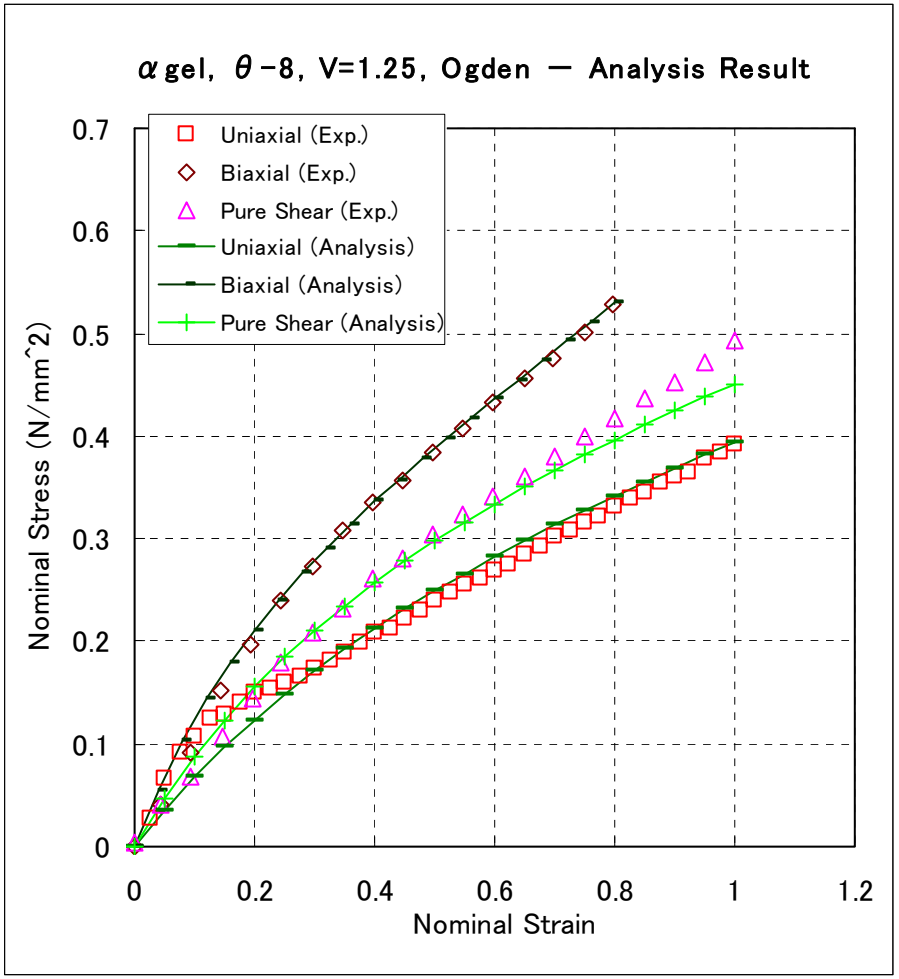
Japan Association for Nonlinear CAE

ADINA

Input File: gel8_v1_25_uni_og.in
gel8_v1_25_shear_og.in
gel8_v1_25_shear_og.in



Analysis model



Analysis result:
Stress-strain relationship