Biax Experiment

For current calibrations – `gpfs/group/cjm38/default/Calibrations/`

Revised: 30 Nov. 2021

Exp. Name: p5642WGSawtootNSosc   **Date/Time:** 15/02/2022

Operator(s): Wood, Borate, Ke   Hydraulics start: 5017.4

Temperature (°C): 22   Hydraulics end: 5023.9

Relative Humidity (%): 9   Data Logger/Control File: 16-chan

Purpose/Description: DAET oscillate NS. Effect of roughness on nonlinear elasticity of dynamically-stressed rock. L-block of Westerly with machined roughness. 1mm wavelength, 0.5mm amp, 0.05mm 'random' roughness (laser). Sample Block Used and Thickness with **no** Sample: SDS Vessel 5x5 cm

Material: Westerly Granite.

Load Cells:

Contact Area: 0.0022231311 m^2

Load cell name	Calibrations (mV/kN)	Target stress (MPa)	Init. Voltage	Volt. @ load
44mm Solid Horiz	129.954 (V/MPa): 0.2889	6, 9.25, 11, 13, 15, 18	-1.016	0.71743, 1.65637, 2.16195, 2.73976, 3.31757, 4.18429
44mm Solid Vert	120.364 (V/MPa): 0.2676	0	0	0.

Vessel Pressures:

Pore Fluid:DI H20

Calibrations (V/MPa)	Pressures (MPa)	Init. Voltage	Volt. @ load
Pc: 0.1456	3, 8.25, 10.5, 12, 13.5, 12	-0.259	0.1778, 0.9422, 1.2698, 1.4882, 1.7066, 1.4882
PpA: 1.5177	2.6, 2.4, 2.0, 1.4	-0.1209	3.82512, 3.52158, 2.9145 , 2.00388
PpB: 1.483	2.6	-0.567	3.2888

Displacement Transducers

Name	Gain (mm/V)
Horiz. Load-point	0.658
Vert. Load-point	3.51
Horiz. On-Board	0.416

Horizontal Servo Settings			*Chilled water at HPS*	*Chiller Unit*	*Proc. water @ Chiller*
P: 900	D_{atten}: 10		1. Temp In (°F): 58	6. Panel Temp (°F): 66	10. Temp In (°F): 80
I: 80	Feedback: 512		2. Pres. In (psi): 6	7. Panel Pres. (psi): 47	11. Pres. In (psi): 2
D: 10	E-gain: 800		3. Temp Out (°F): 79	8. Near Pres. In (psi): 2	12. Temp Out (°F): 48
Vertical Servo Settings			4. Pres. Out (psi): 2	9. Near Pres. Out (psi): 6	13. Pres. Out (psi): 8
P: –	D_{atten} –		5. Flow (lpm): 15		
I: –	Feedback: –			*Hyd. Power Supply (HPS)*	
D: –	E-gain: –		14. Tank Temp (°C): 125.5	15. Temp. Out (°C): 15	16. Pres. Out (psi): 2800

Experiment Notes

\# 2285 NS to 6 MPa

\# 2540 Pc to 3 MPa

\# 2770 refill PpB, empty PpA

\# 3050 PpB, PpA to 2.6 MPa. Difficult to prevent flow – very permeable

\# 13000 100 Hz, NS osc. Flow rate seems to vary slightly in response to osc.

\# 104200 NS to 9.25 MPa, Pc to 8.25 MPa

\# 104470 refill PpB, empty PpA

\# 105825 10Hz, PpB, PpA to 2.6 MPa.

\# 109600 1000 Hz, NS osc. set. run1

\# 9337100 refill PpB, empty PpA

\# 933950 NS to 11 MPa, Pc to 10.5 MPa

\# 934100 10Hz, PpB, PpA to 2.6 MPa.

\# 936300 1000 Hz, NS osc. set. run2

\# 1768700 NS to 13 MPa, Pc to 12 MPa.

\# 1769700 1000 Hz, NS osc. set. run3

\# 2597000 NS to 15 MPa, Pc to 13.5 MPa.

\# 2598900 refill PpB, empty PpA

\# 2599000 10Hz, PpB, PpA to 2.6 MPa.

\# 2601500 1000 Hz, NS osc. set. run4

\# 3431000 NS to 18 MPa, Pc to 12 MPa.

\# 3431300 10Hz, PpB, PpA to 2.6 MPa.

\# 3433000 1000 Hz, NS osc. set. run5. several electrical spikes in NS.

\# 4260500 NS to 13 MPa, Pc to 12 MPa.

\# 4260800 1000 Hz, NS osc. set. run6

\# 5151700 refill PpB, empty PpA

\# 5152200 NS to 9.25 MPa, Pc to 8.25 MPa

\# 51528000 1000 Hz, NS osc. set. run7

\# 6077790 remove PpA, PpB, Pc