

# Biax Experiment

For current calibrations – [gpfs/group/cjm38/default/Calibrations/](#)  
Revised: 30 Nov. 2021

**Exp. Name:** p5607WGSawcut600NSosc  
**Operator(s):** Wood  
Temperature (°C):  
Relative Humidity (%):

**Date/Time:** 04/01/2022  
Hydraulics start: 4864.4  
Hydraulics end:  
Data Logger/Control File: 16-chan

**Purpose/Description:** DAET oscillate NS. Effect of roughness on nonlinear elasticity of dynamically-stressed rock.  
Sample Block Used and Thickness with **no** Sample: SDS Vessel 5x5 cm

Material: Westerly Granite. Sawcut. 600 grit Benchtop Sample Thickness (mm): 32.5
--

## Load Cells:

Contact Area: 0.0022231311 m<sup>2</sup>

Load cell name	Calibrations (mV/kN)	Target stress (MPa)	Init. Voltage	Volt. @ load
44mm Solid Horiz	129.984 (V/MPa): 0.289	4, 9.25, 11, 13, 15, 18	-0.986	0.16989, 1.68699, 2.19269, 2.77063, 3.34857, 4.21549
44mm Solid Vert	120.364 (V/MPa): 0.2676	0	3.704	3.704

## Vessel Pressures:

Pore Fluid: DI H2O

Calibrations (V/MPa)	Pressures (MPa)	Init. Voltage	Volt. @ load
<i>P<sub>c</sub></i> : 0.1456	2, 8.25, 10.5, 12, 13.5, 12	-0.2463	0.0449, 0.9549, 1.2825, 1.5009, 1.7193, 1.5009
<i>P<sub>pA</sub></i> : 1.5177	2.6, 1.4	-0.1315	3.81452, 1.99328
<i>P<sub>pA</sub></i> : 1.483	2.6	-0.595	3.2608

## 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 <sub>atten</sub> : 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): 46	11. Pres. In (psi): 2
D: 10	E-gain: 800	3. Temp Out (°F): 76	8. Near Pres. In (psi): 2	12. Temp Out (°F): 48
Vertical Servo Settings		4. Pres. Out (psi): 2	9. Near Pres. Out (psi): 5	13. Pres. Out (psi): 5
P: –	D <sub>atten</sub> –	5. Flow (lpm): 15		
I: –	Feedback: –	Hyd. Power Supply (HPS)		
D: –	E-gain: –	14. Tank Temp (°C): 49	15. Temp. Out (°C): 15	16. Pres. Out (psi): 2700

## Experiment Notes

# 4000 Int. DCDT Offset (We are looking for an area where the core will not be sticking)

# 5400 Int. DCDT Offset (we once again are looking for an area where the core will not be locked) Near 6V had the best response.

# 77000 begin saturation

# 139000 NS to 9.25 MPa, Pc to 8.25 MPa.

# 143000 PpB to 2.6. PpA to 2.6, 1.4 MPa.

# 146000 practice NS oscillation. 0.2, 1 MPa.

# 149700 begin flow-through, 10 Hz

# 155700 run1, run2

# 2795000 NS to 11 MPa, Pc to 10.5 MPa

# 2795500 run3, run4

# 5480500 NS to 13 MPa, Pc to 12 MPa.

# 5480830 run5, run6

# 8135900 NS to 15 MPa, Pc to 13.5 MPa.

# 8136300 run7, run8

# 10788380 NS to 18 MPa, Pc to 12 MPa.

# 10788800 run9, run10

# 13443800 Pc to 13.5 MPa, Ns to 15 MPa

# 13444000 run11

# 14069100 Pc to 12 MPa, NS to 13 MPa

# 14069300 run12

# 14684500 Pc to 10.5 MPa, NS to 11 MPa

# 14684600 run13

# 15008600 VSX computer crashed, restarted.

# 15009070 run14. same stresses as run13. restart osc protocol

# 15624100 Pc to 8.25, NS to 9.25 MPa

# 15624300 run15

# 15775000 random Horiz. lock.

# 16219350 PpB, PpA Pc, NS to 0. end experiment