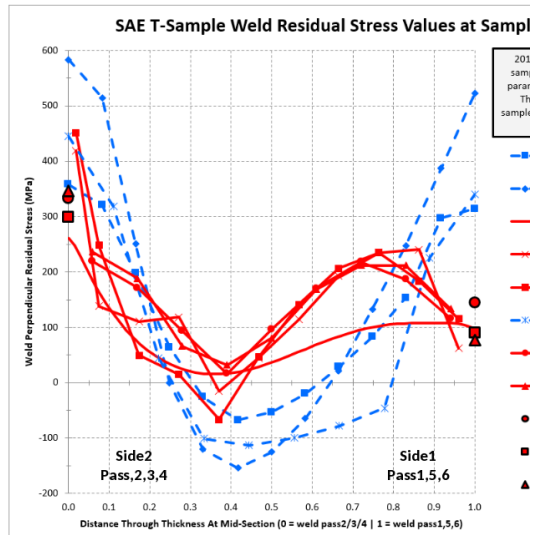


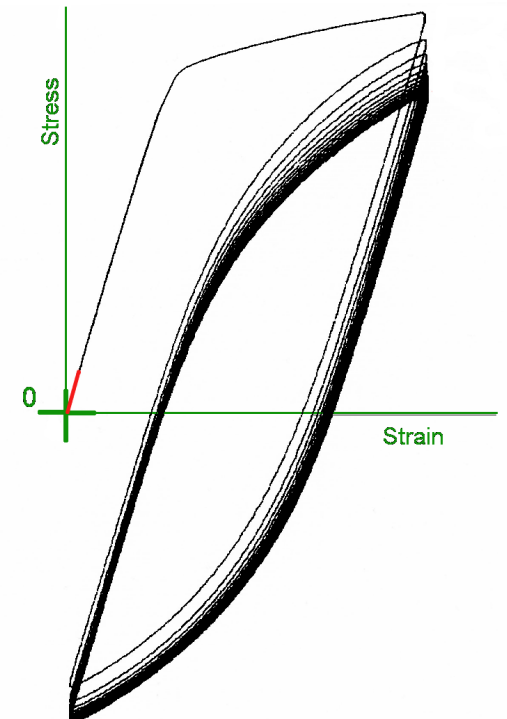
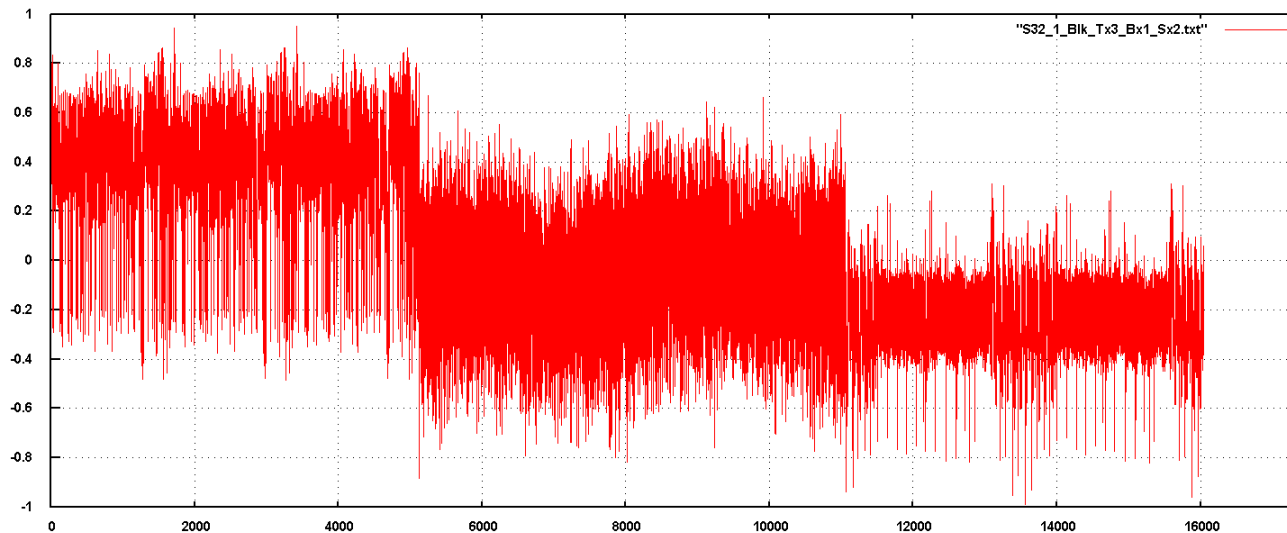
"Estimating Cyclic Mean Stress Relaxation for Service Load Histories"

Final Residual Stress Results (2 mm

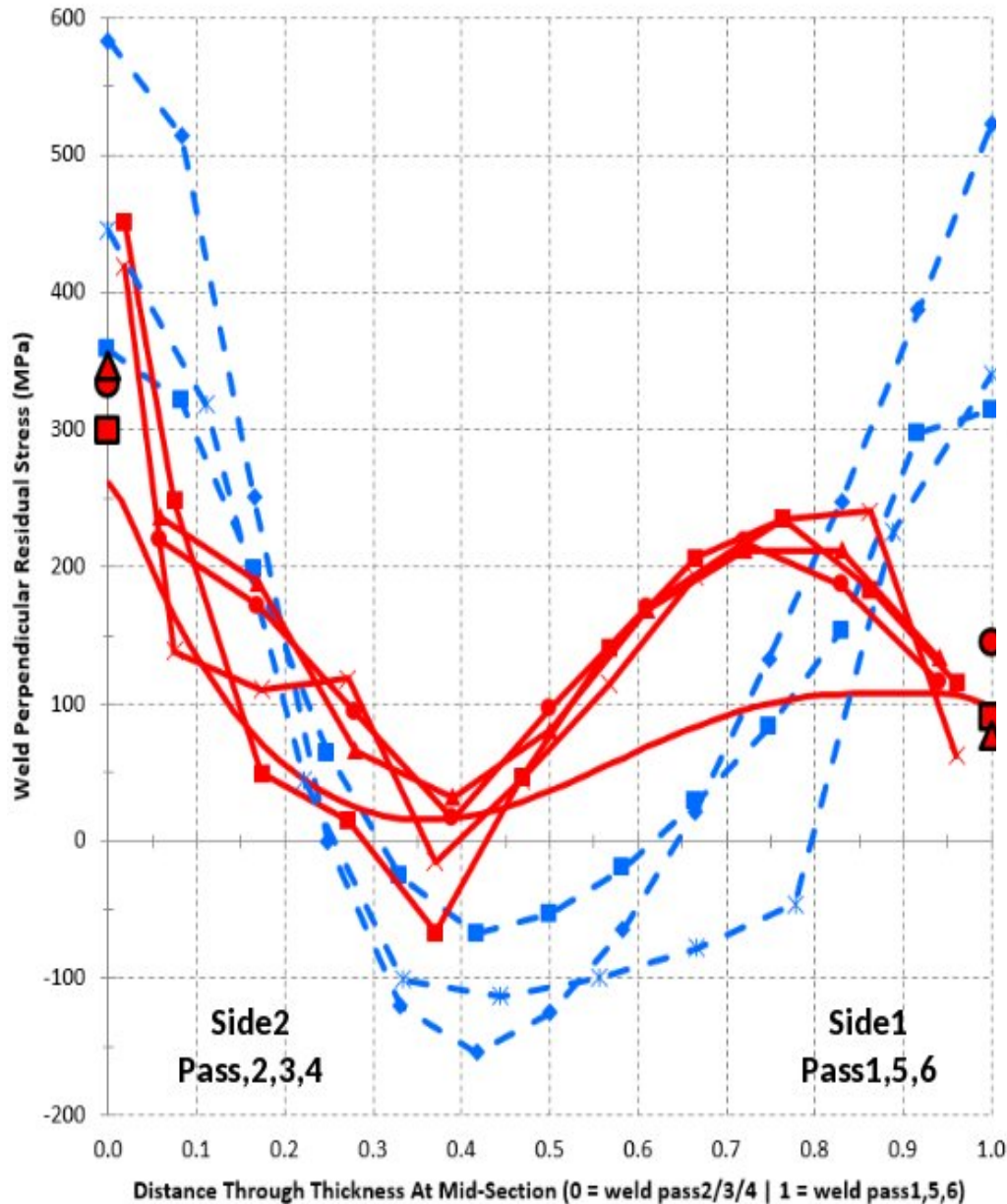


Al Conle, U. Waterloo.

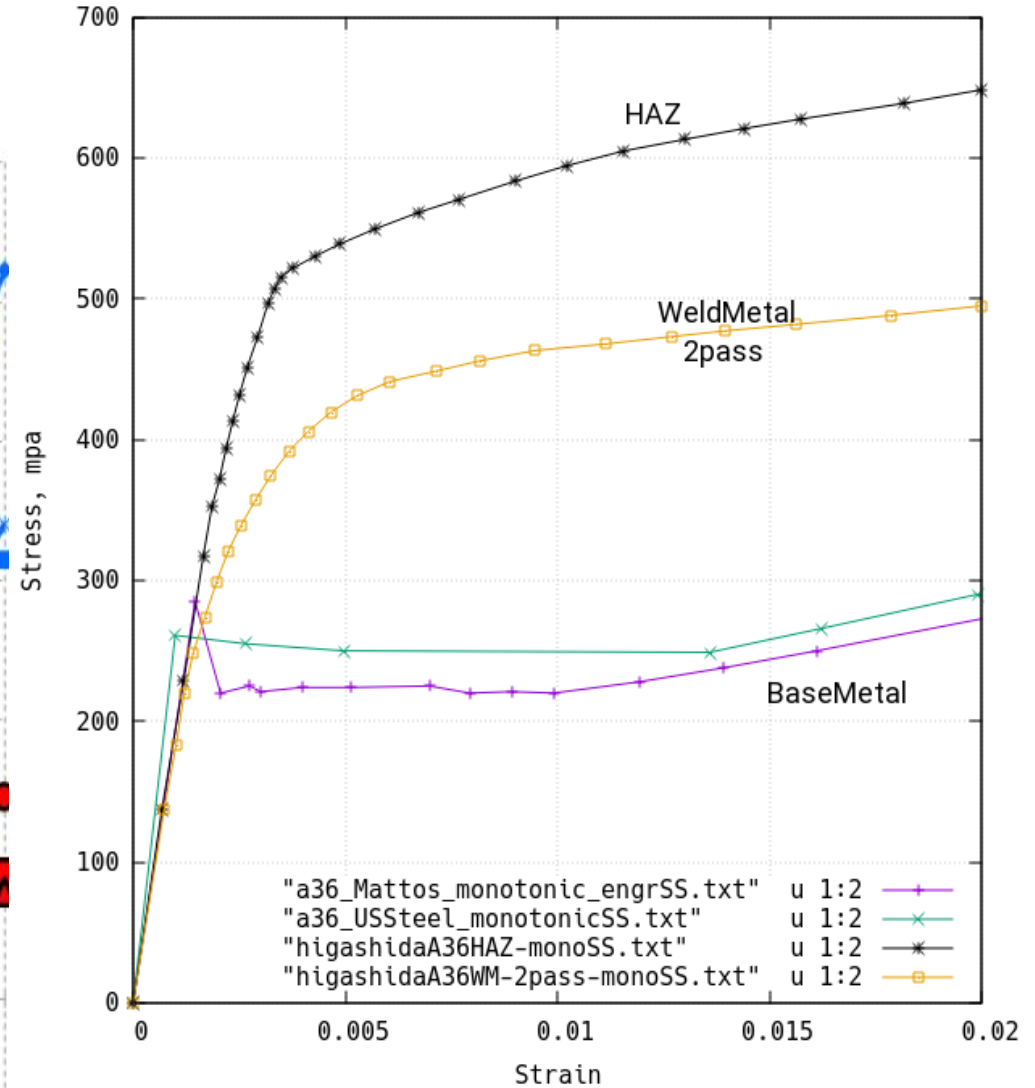
F.D.&E. Meeting, May 16 2018



SAE T-Sample Weld Residual Stress Values



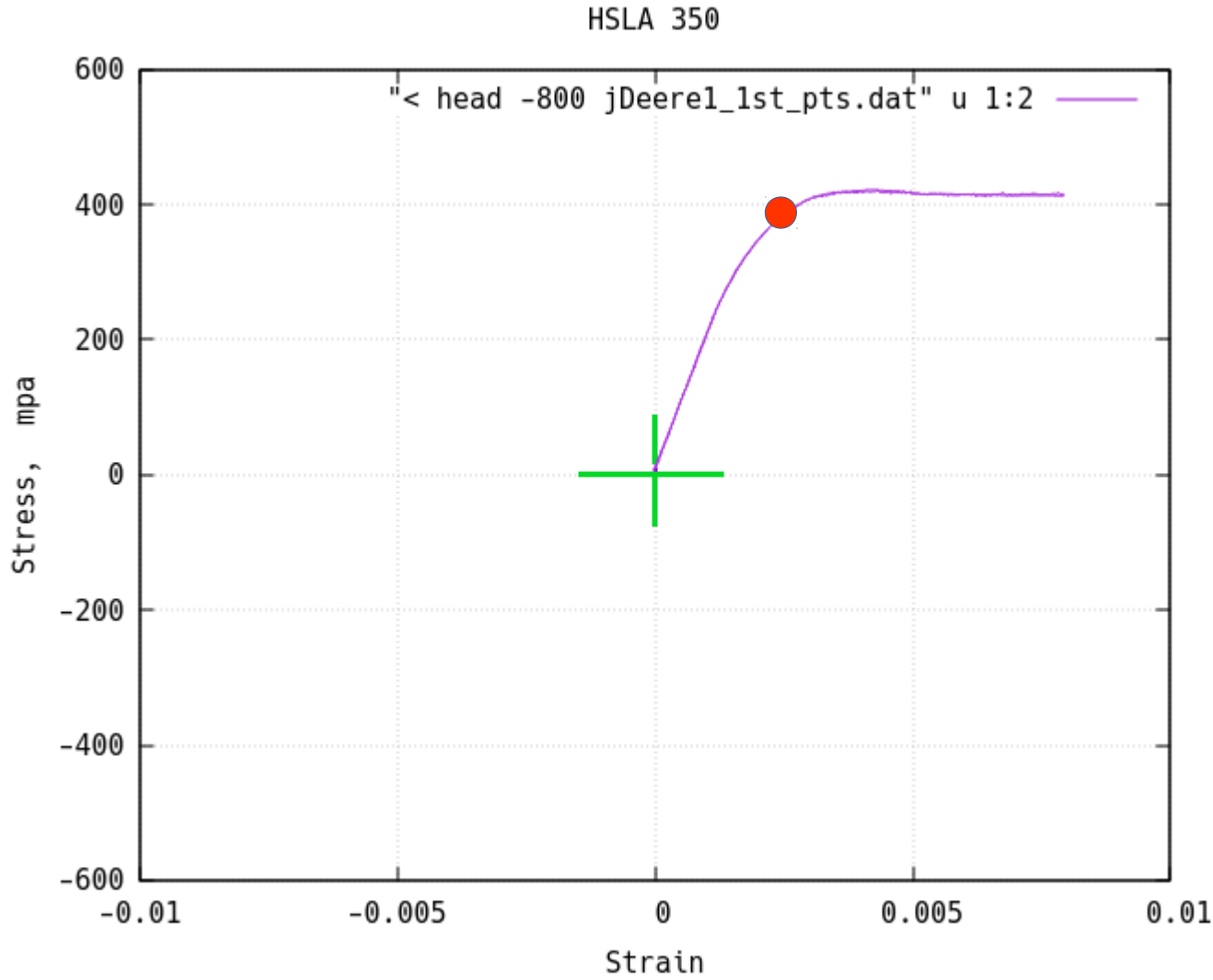
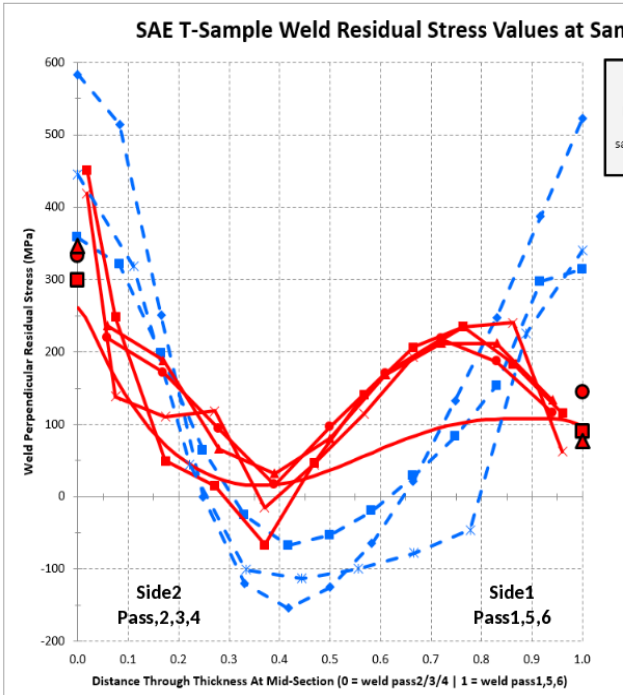
A36 Steel Monotonic Tensile Stress-Strain



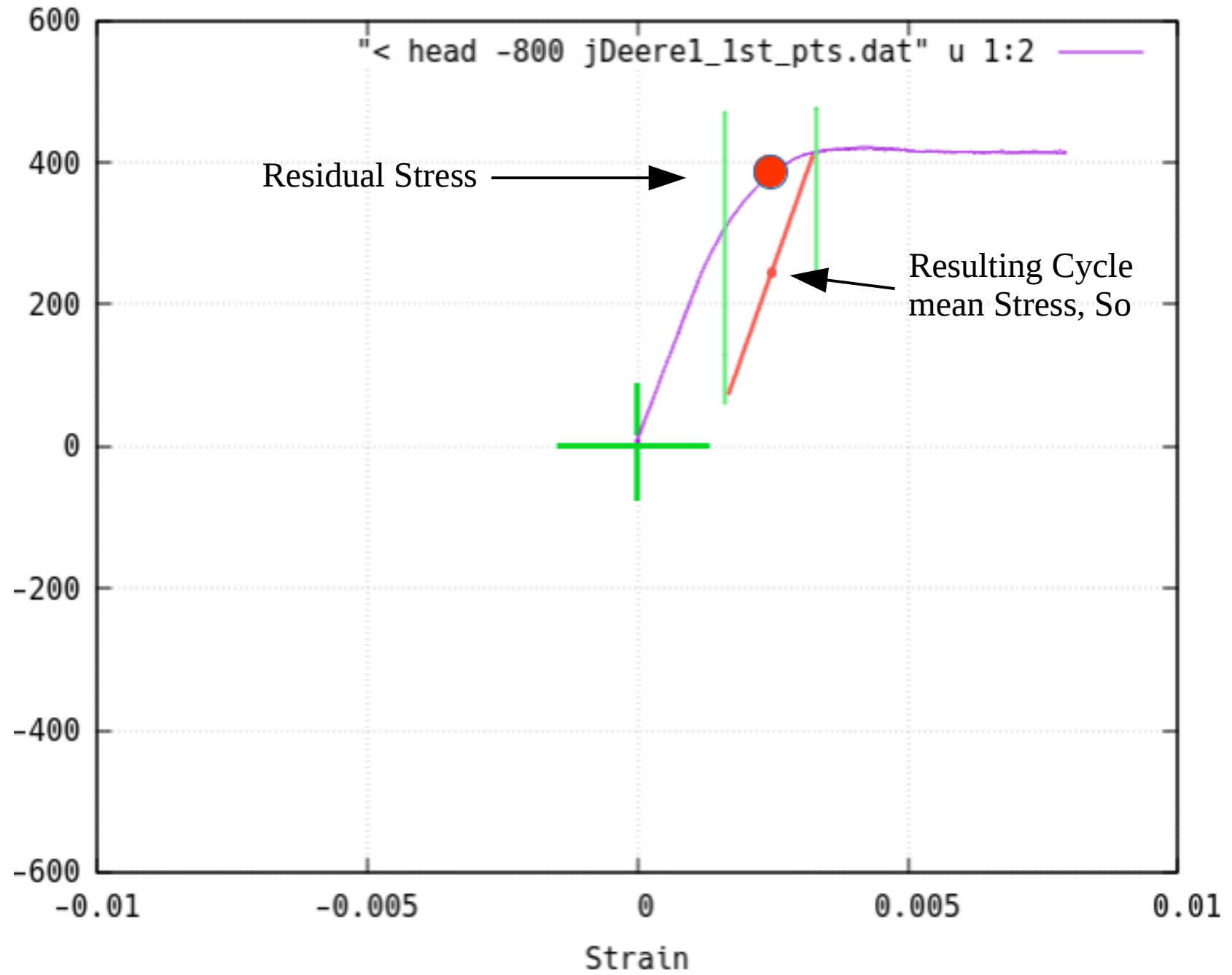
Mattos, 1975
PhD U.Illinois

Higashida
FCP-22
U.Illinois

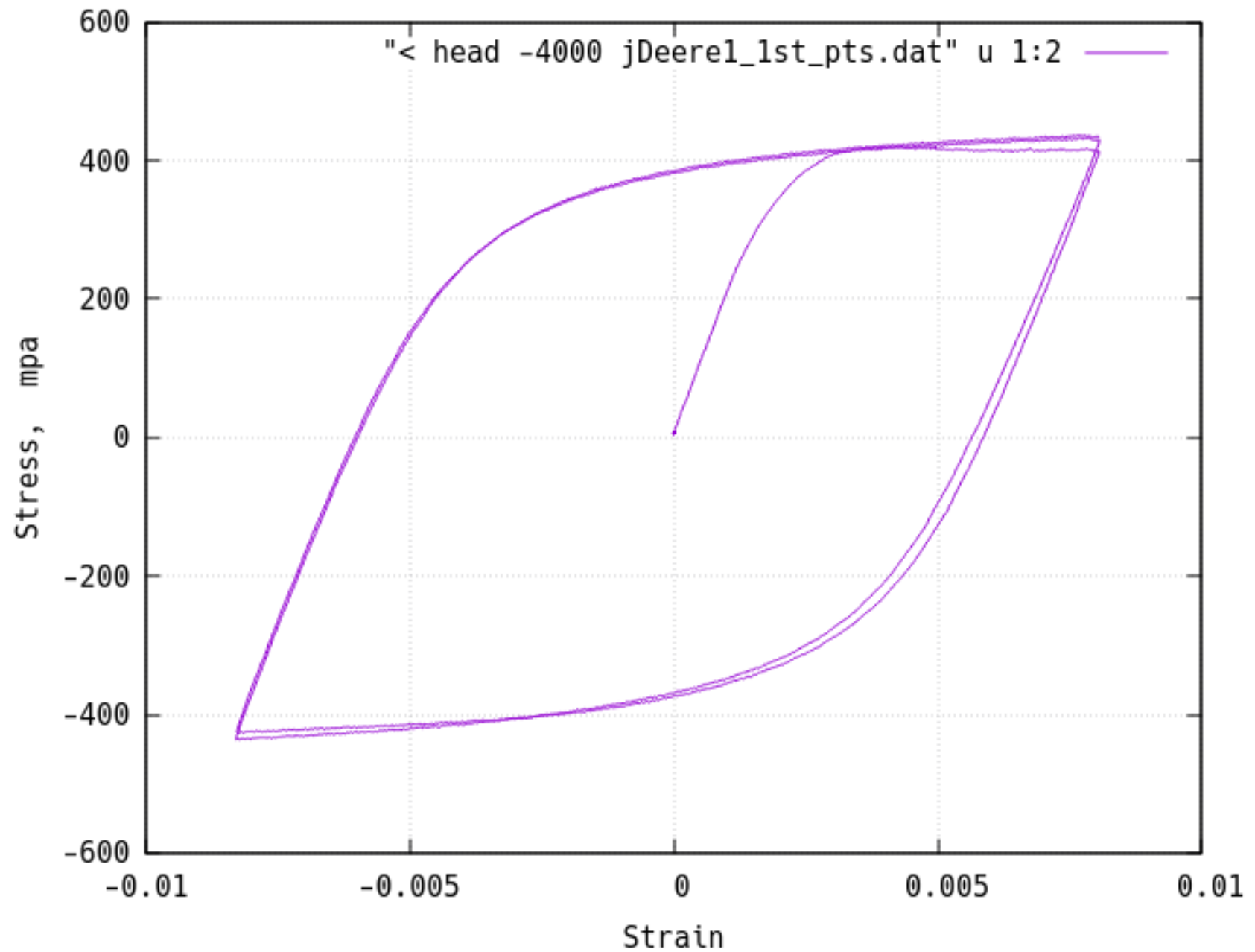
Final Residual Stress Results (2 mr

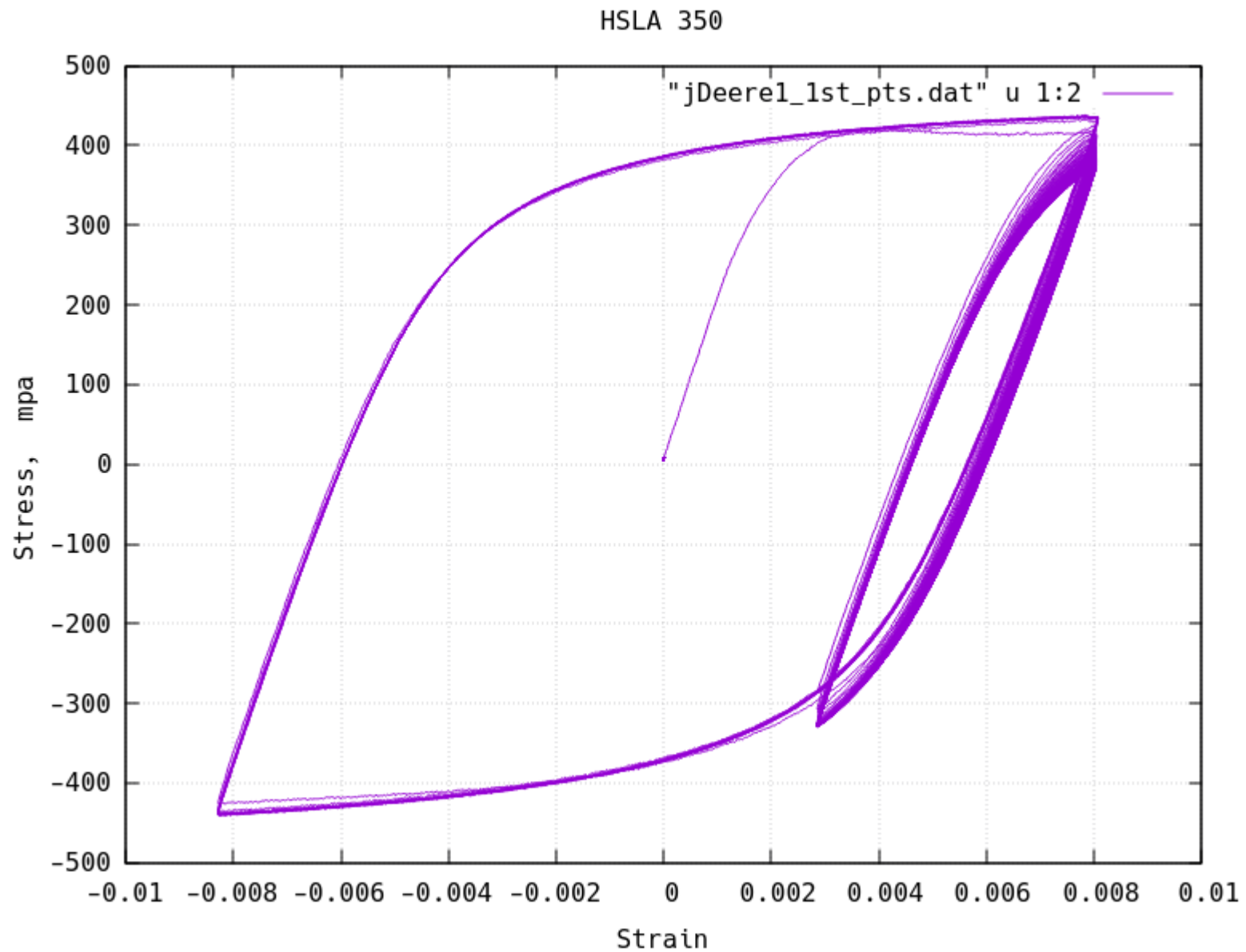


HSLA 350



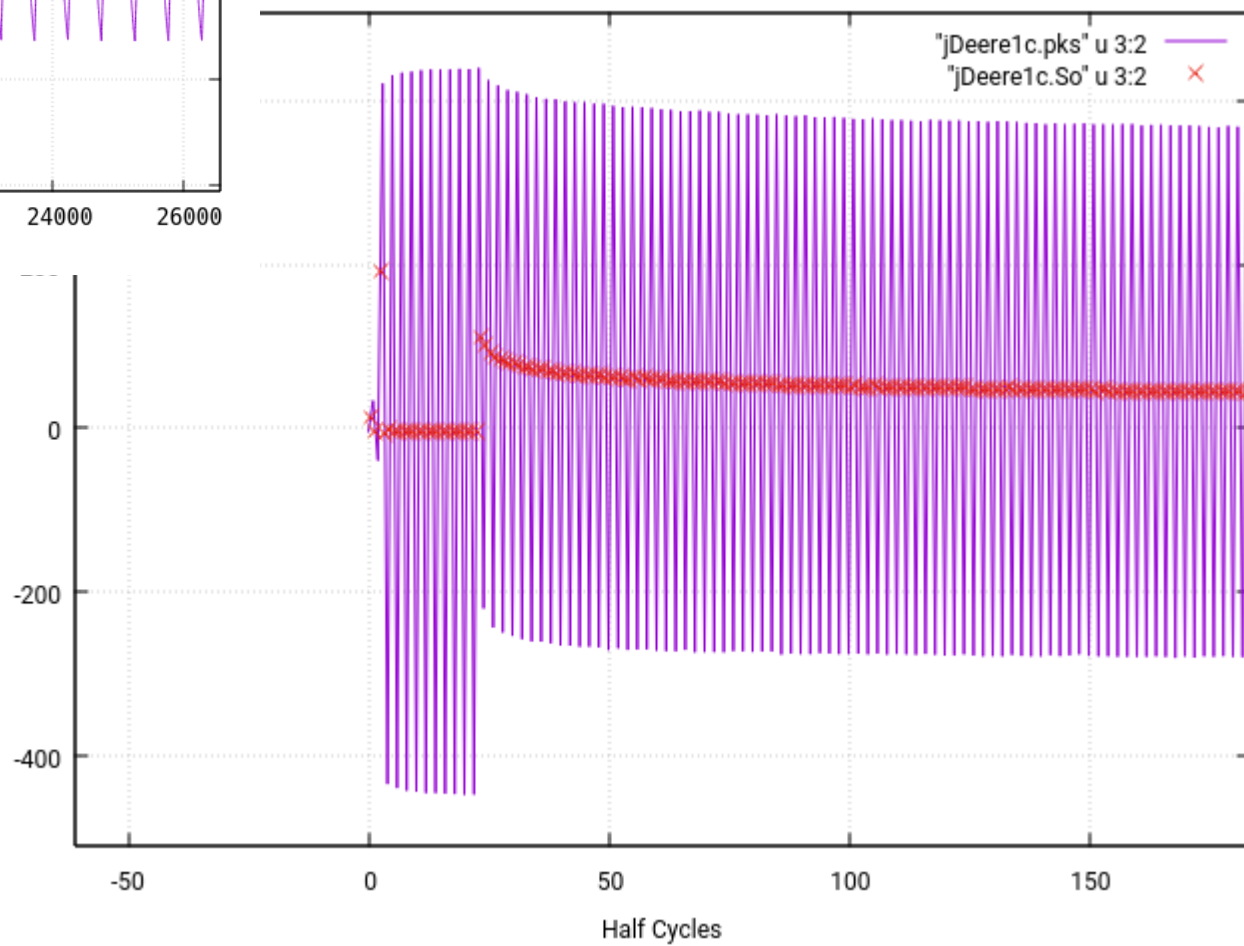
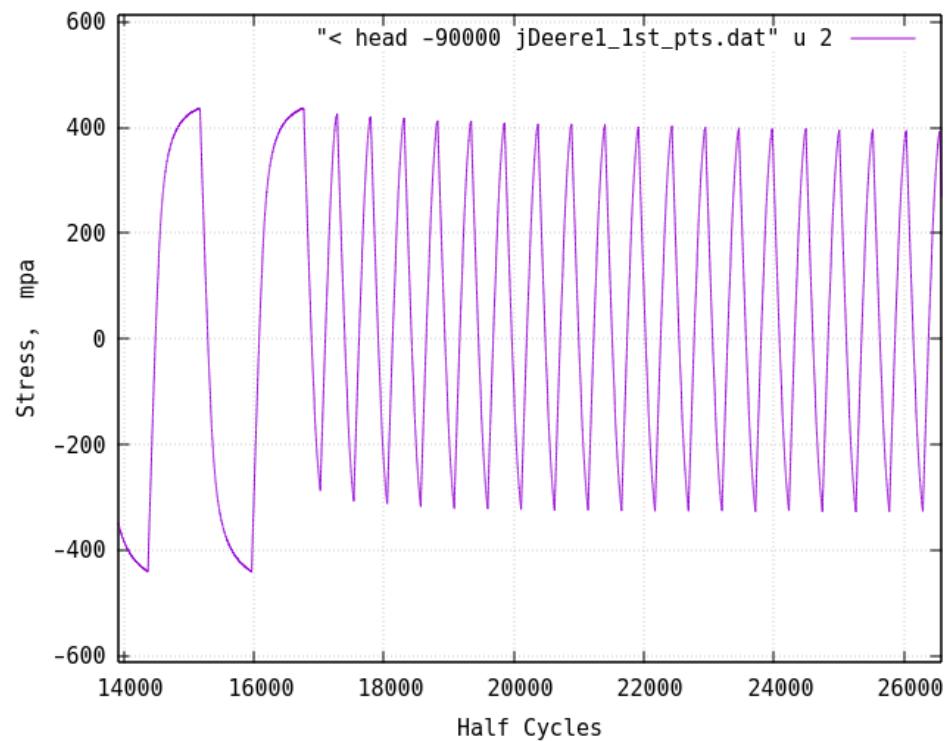
HSLA 350



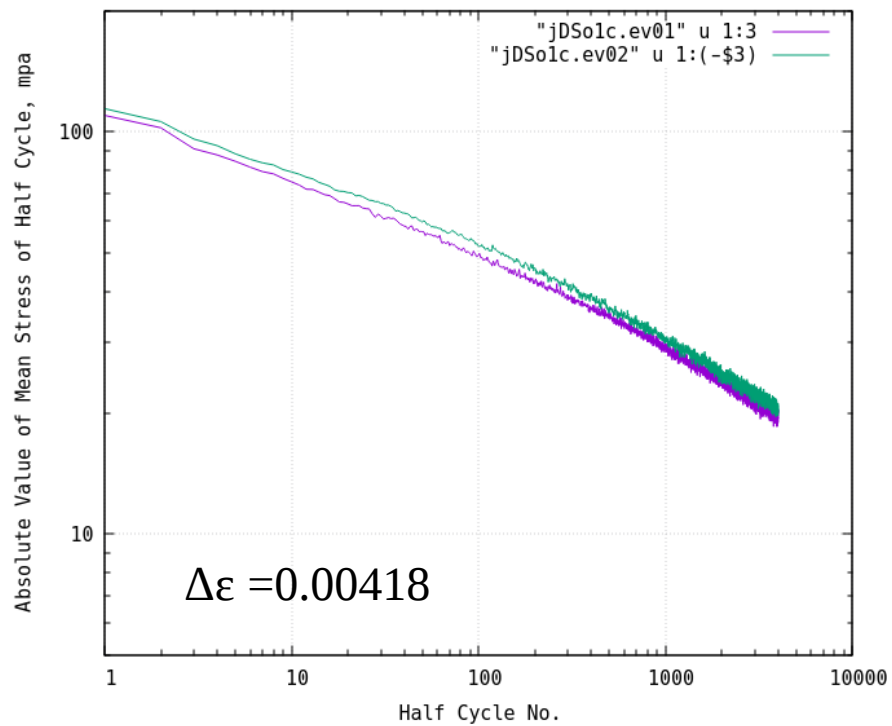
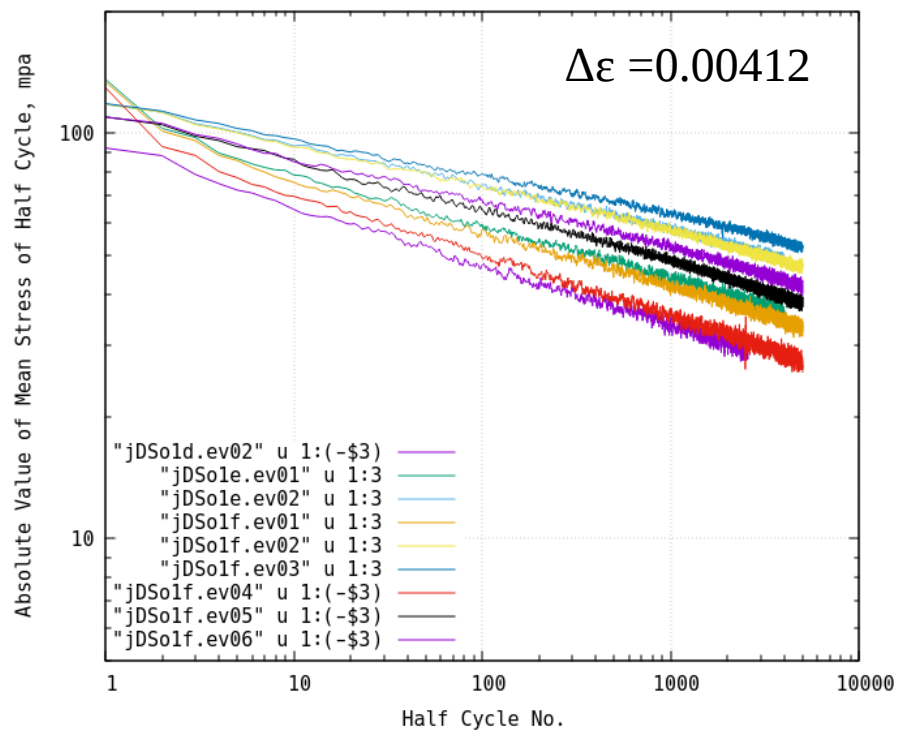


<http://fde.uwaterloo.ca/Fde/Notches.new/Weld+Residuals/VideoA/animation.gif>

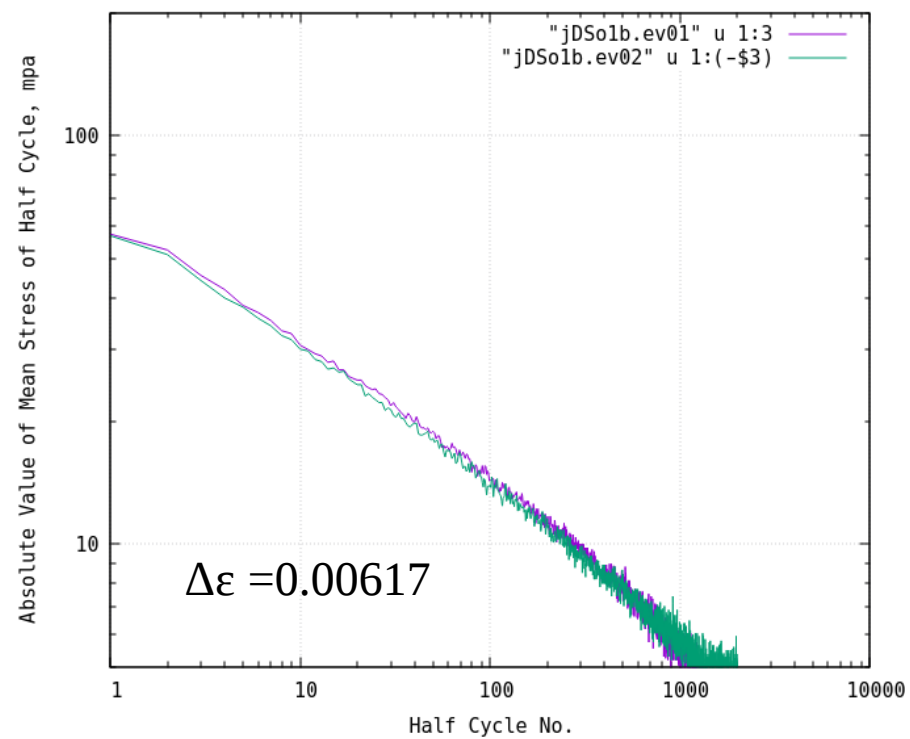
HSLA 350



HSLA 350 Cyclic Mean Stress Relaxation



HSLA 350 Cyclic Mean Stress Relaxation



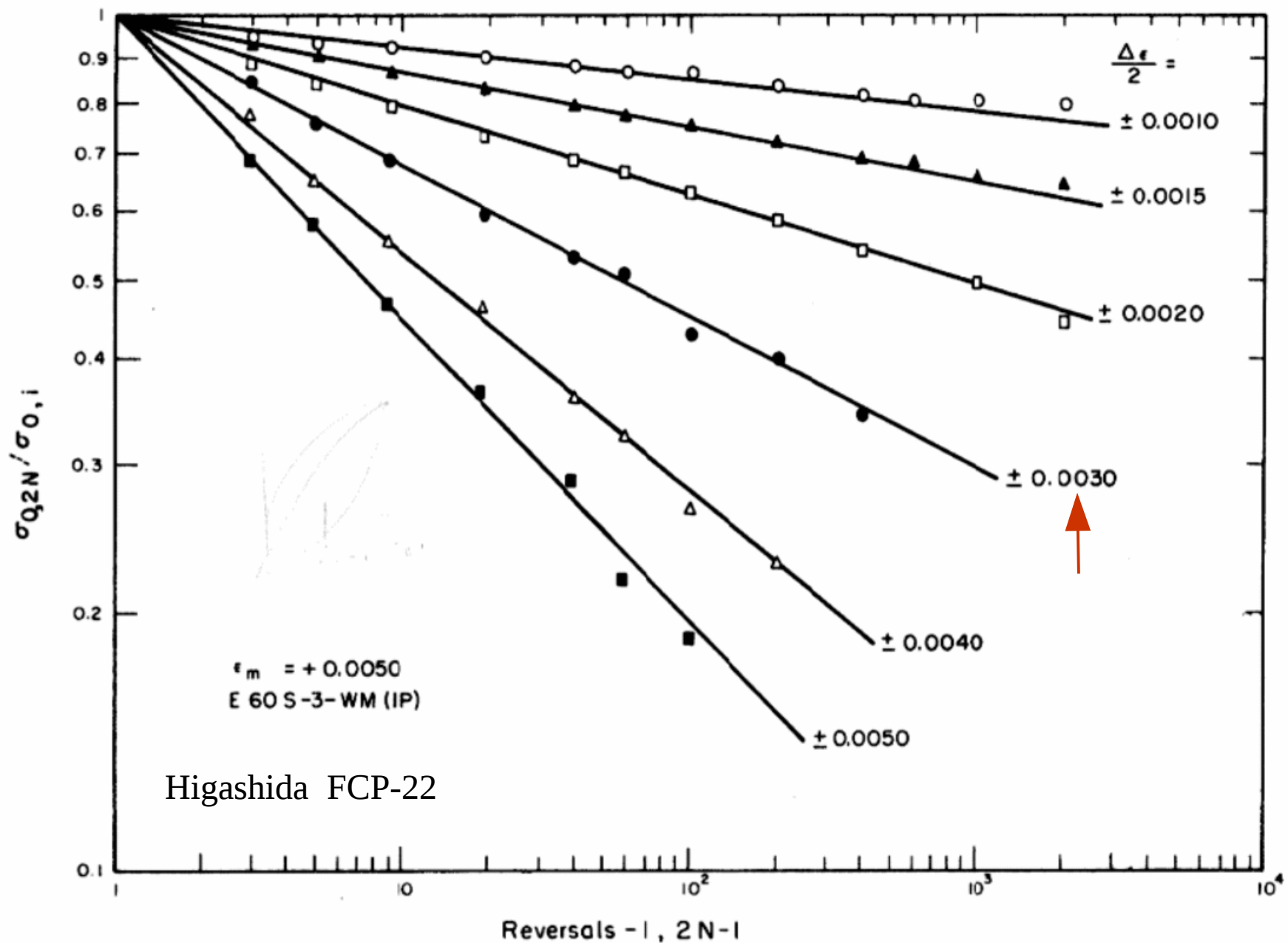
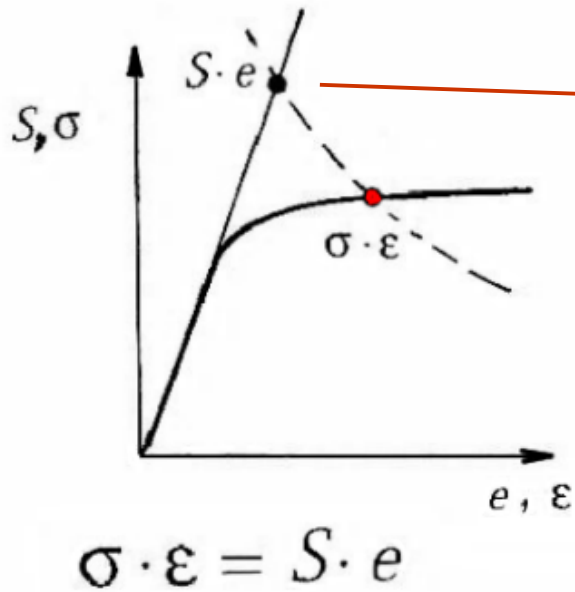


Fig. 71 Cyclic Relaxation Data of the Mean Stress (Dimensionless Value) for E60S-3-WM(1P) at Constant Mean Strain of +0.005



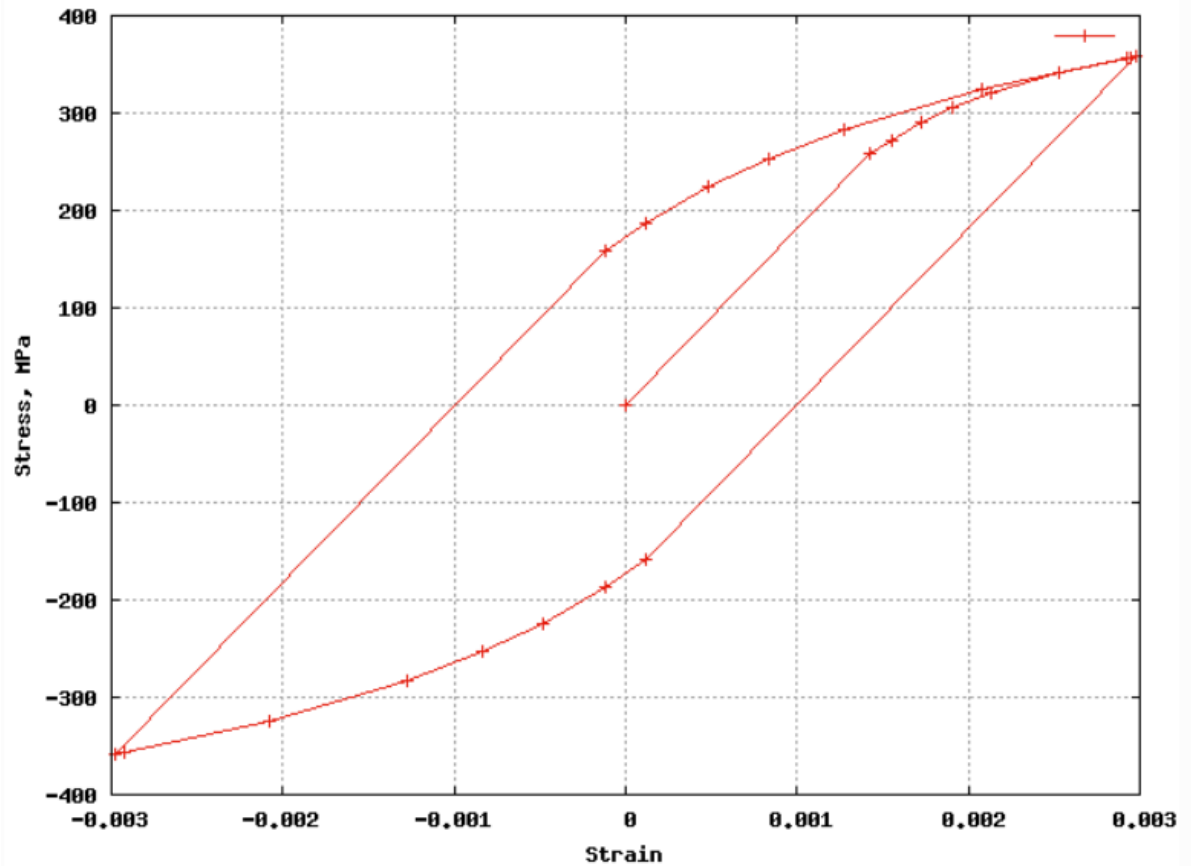
Nominal and Local Stress-Strain:

#xcalc2	Loop	Smax	Smin	N	Sigmax	Sigmin	Delta	Epsmax	Epsmin	DeltaEps
#xcalc2	1	450.0	-450.0	1.0	358.	-358.	717.	0.00298	-.00298	0.00596

Life Predictions (history repetitions):

#xcalc3	StrainLife_Reps	SWaT_Life_Reps	StressLife_Reps	Morrow_Reps	Goodman_Reps
#xcalc3	47982.2	47982.1	47982.2	47982.2	47982.2

Local Stress and Strain Response:



Shown in blue overlay is the nominal stress range that would relax 50% So in 100 cycles

