



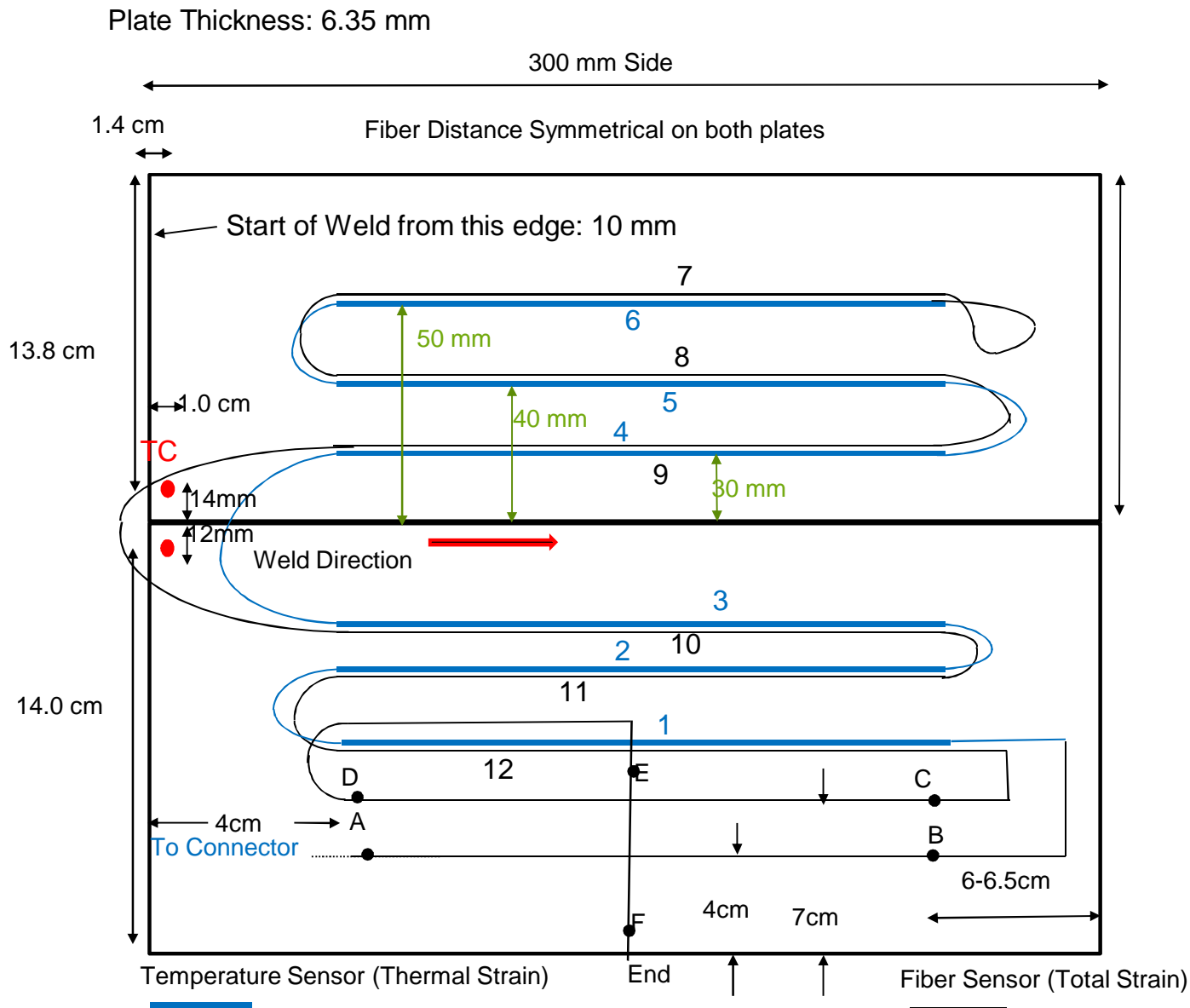
# **Residual Strain Fields near a weld joint using Rayleigh Backscattering 1018 to 1018 Plate (3<sup>rd</sup> Trial Constrained)**

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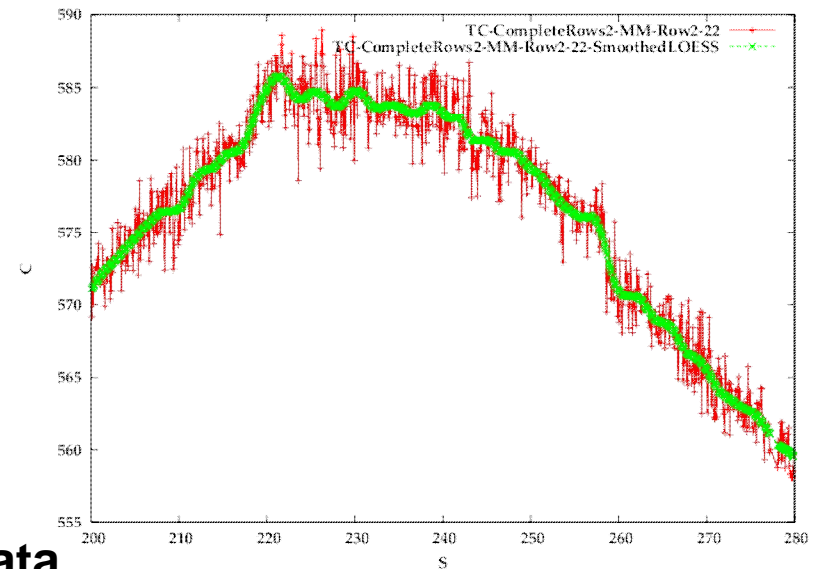
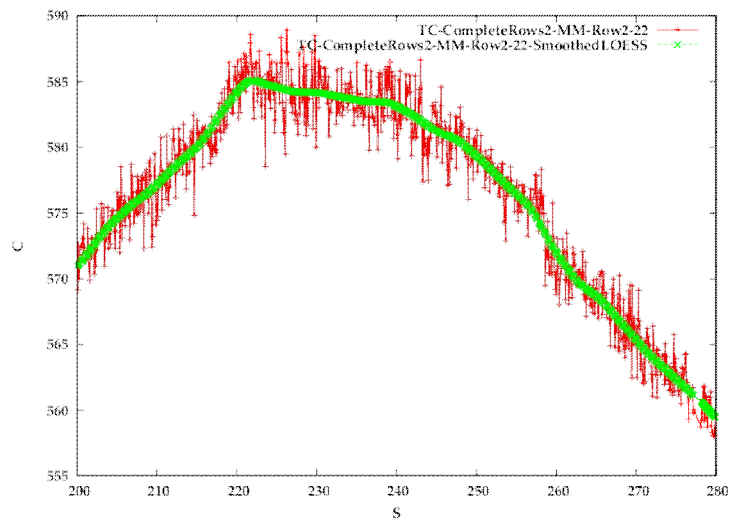
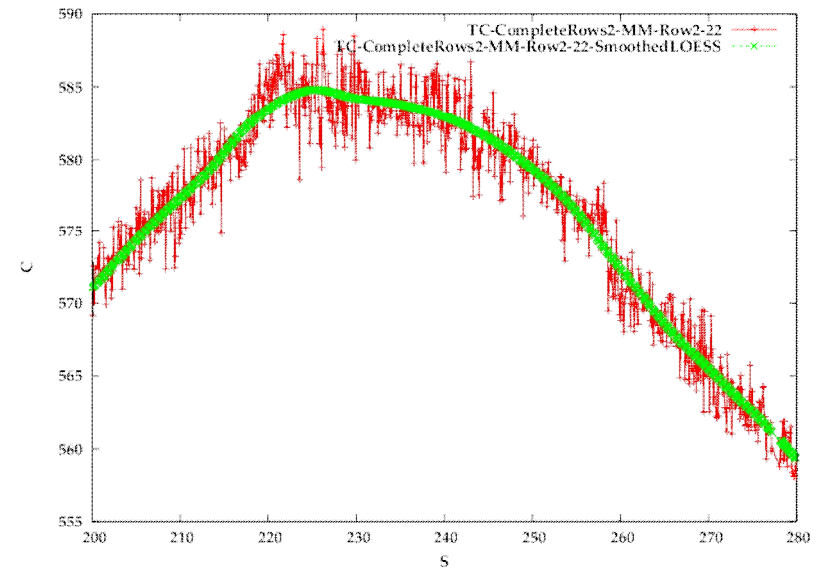
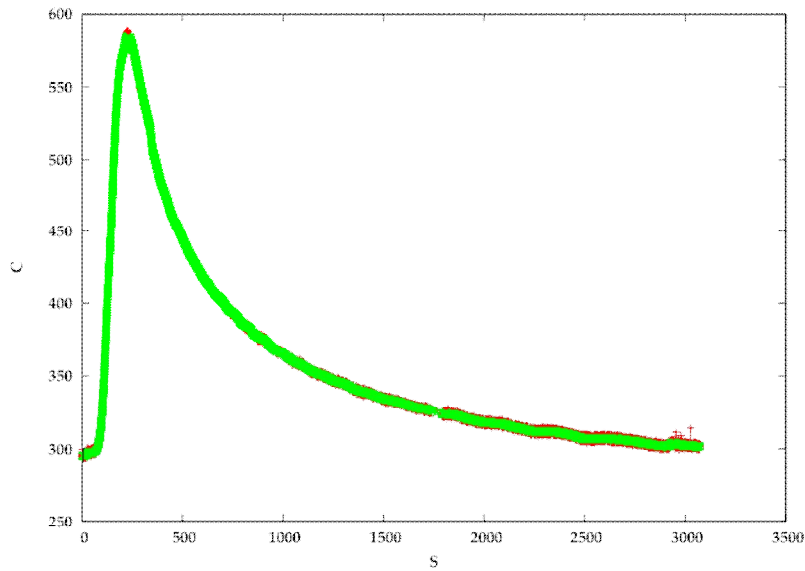
# Layout of Optical Fiber for TC & SG



Section	Start	Finish
1	0.8979	1.0019
2	1.1344	1.2388
3	1.3508	1.4557
4	1.6901	1.7966
5	1.9651	2.0506
6	2.2112	2.3157
7	2.5327	2.6301
8	2.7705	2.8705
9	3.0602	3.1680
10	3.4002	3.5007
11	3.6564	3.7642
12	3.9379	4.044
A-B	0.5316	0.7268
C-D	4.2047	4.4053
E-F	4.6451	4.7081

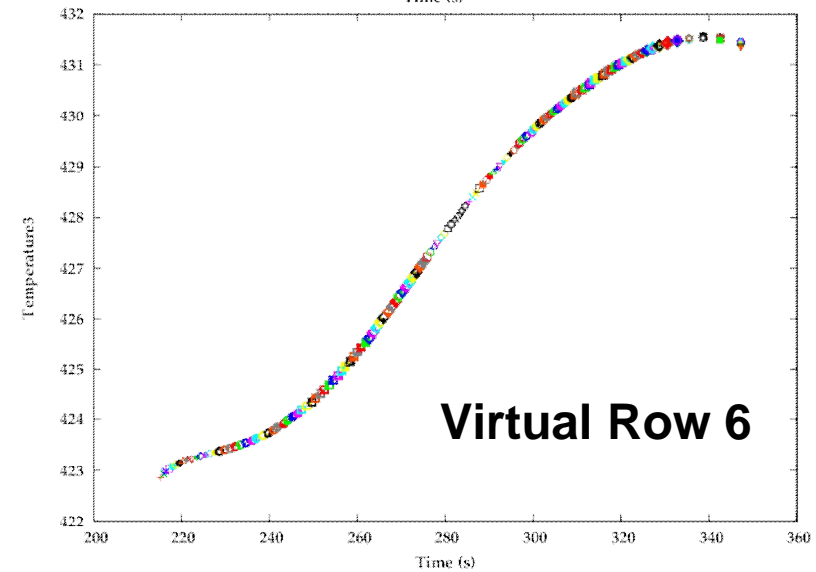
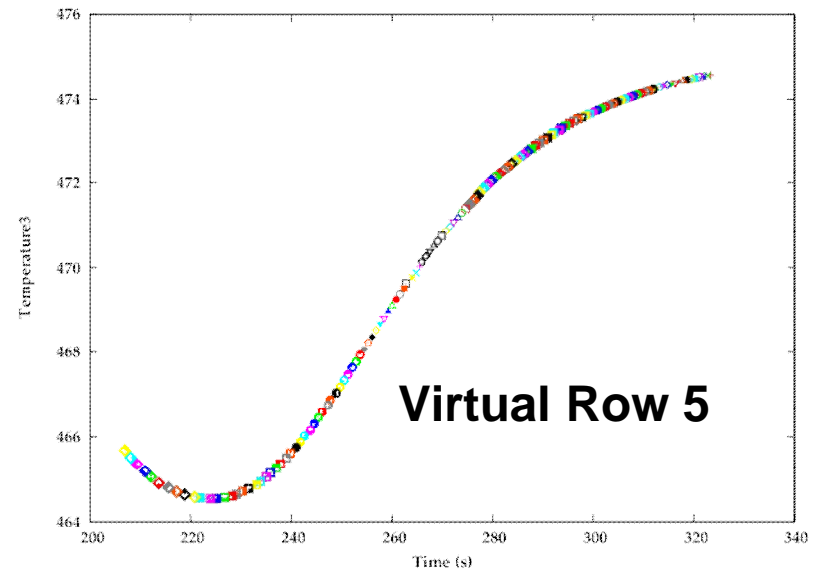
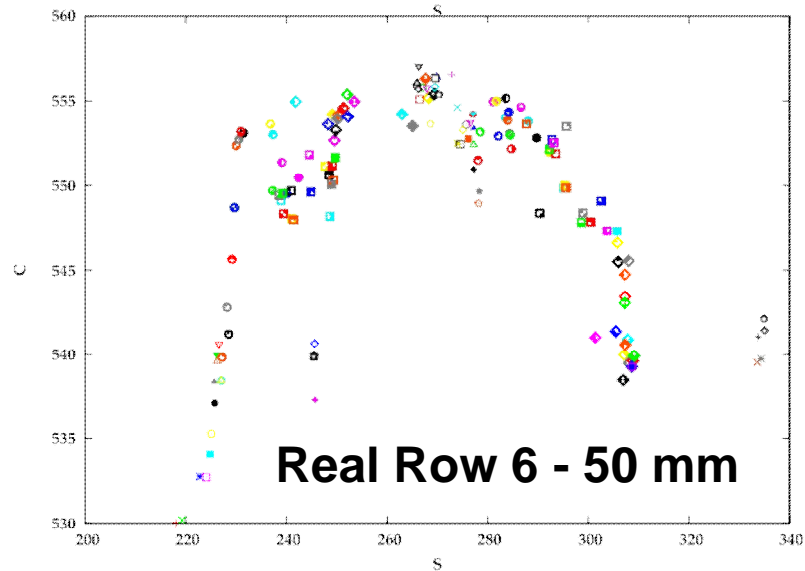
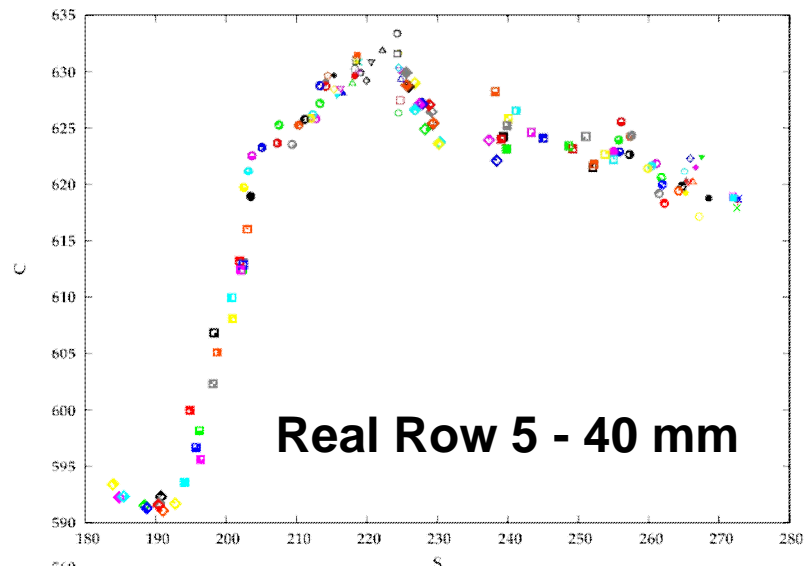


# Smoothing Noisy TC Data - LOESS Algorithm

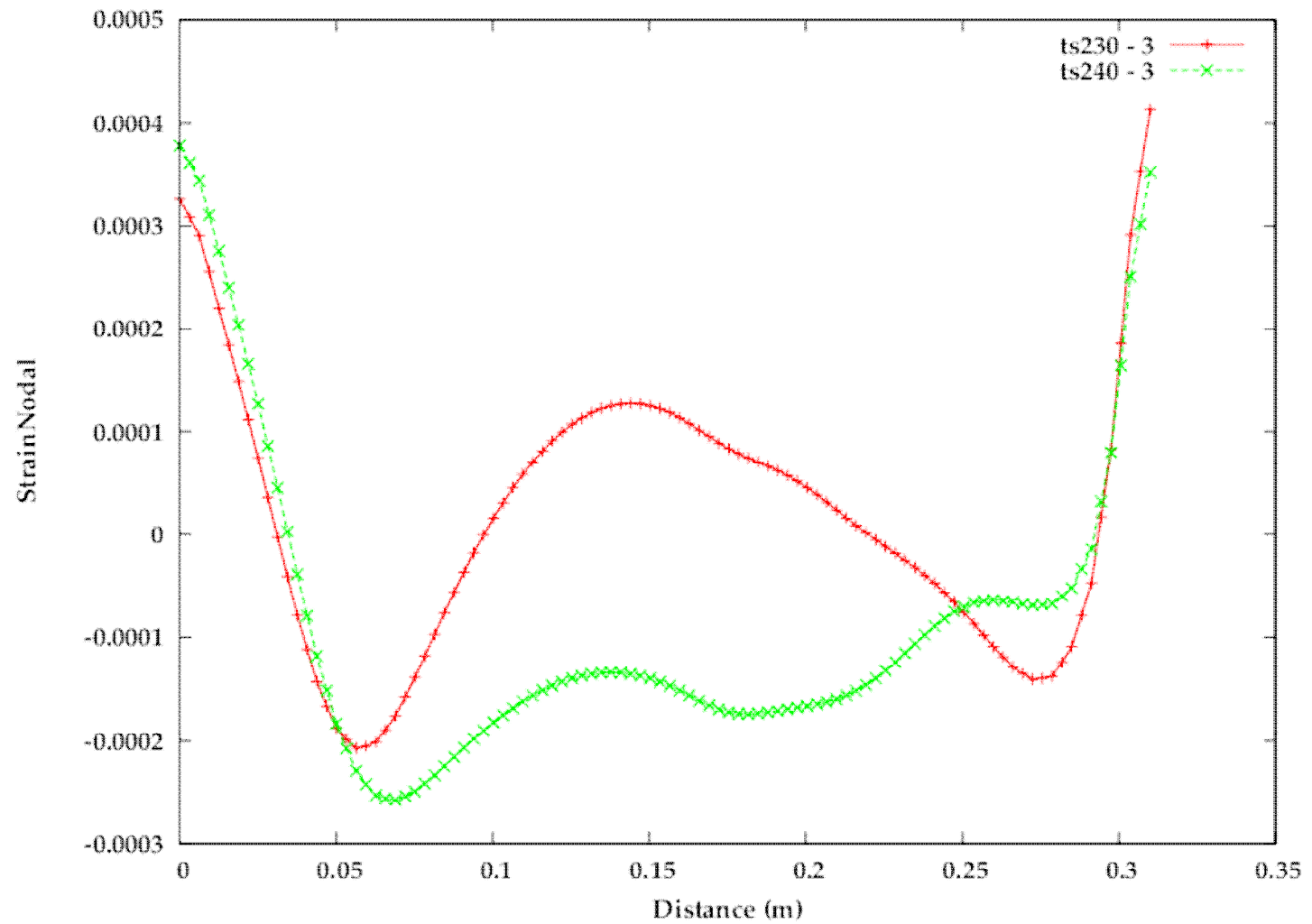


Red - raw data  
Green - filtered data

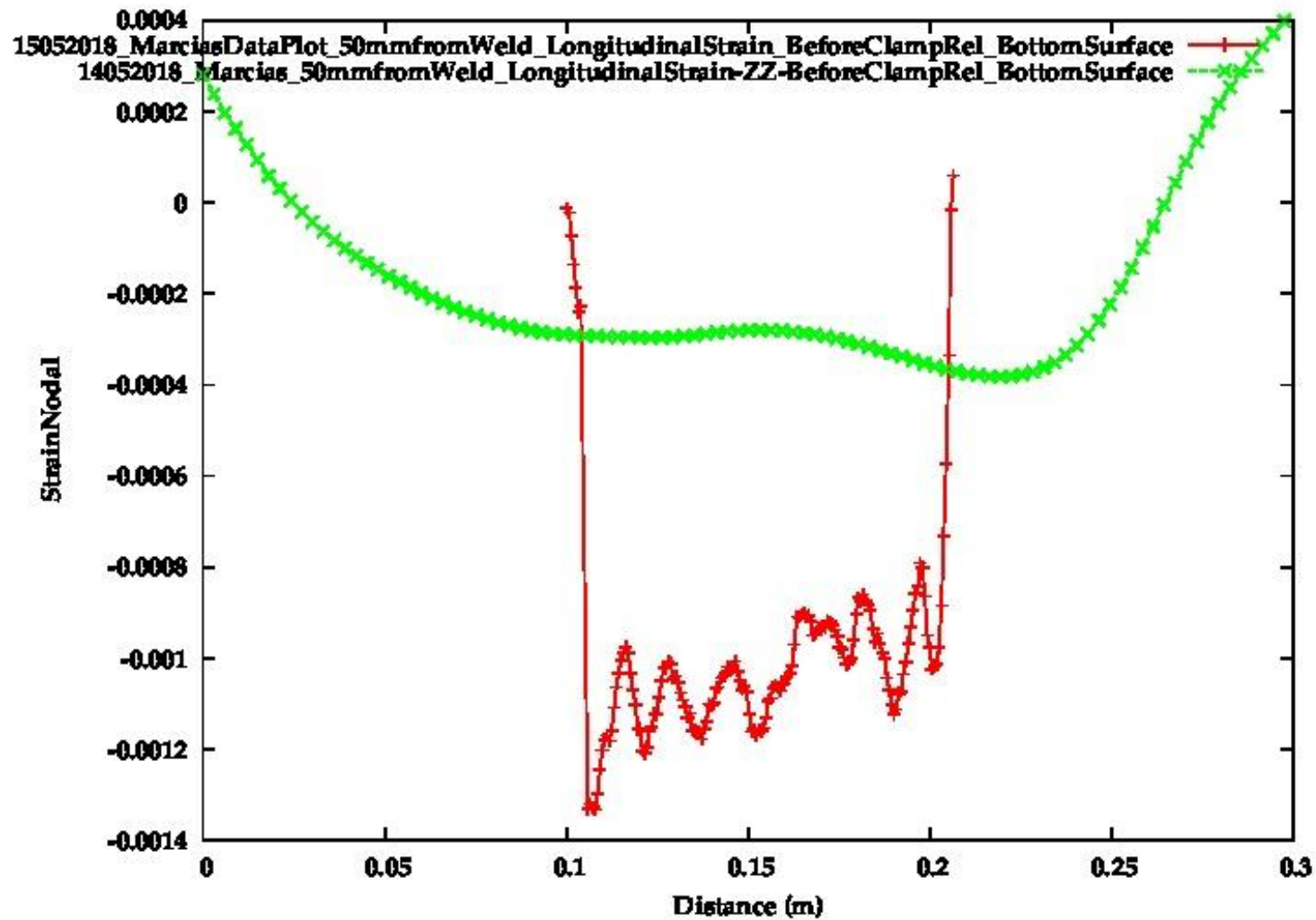
# Compare Real & Virtual TC Data - Row 5 & 6



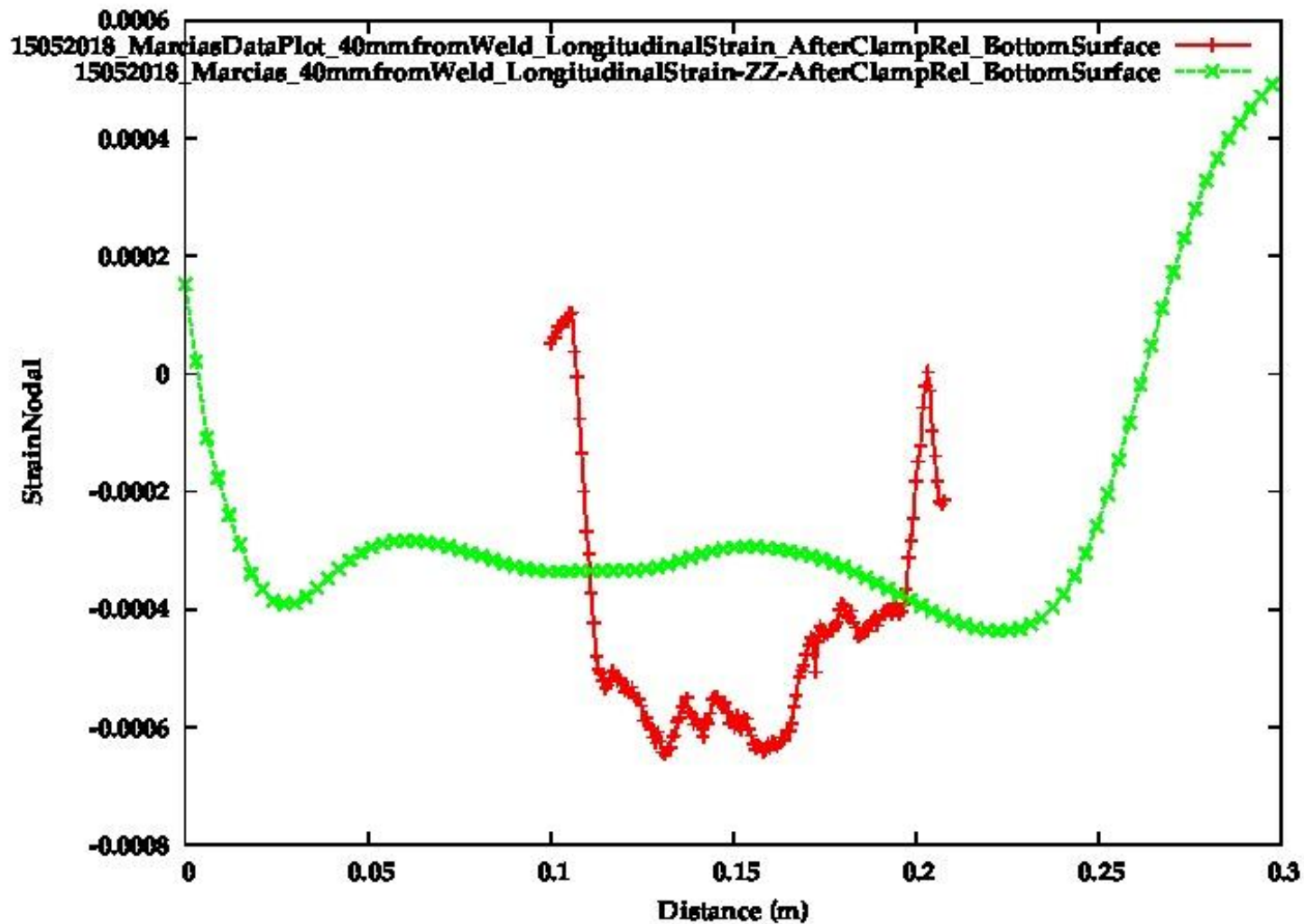
Longitudinal total virtual strain **RED** before and **GREEN** after release  
of clamps in third layer on right side 50 mm from weld line



Longitudinal total strain **RED** real data and **GREEN** virtual data before  
release  
of clamps in third layer on right side 50 mm from weld line

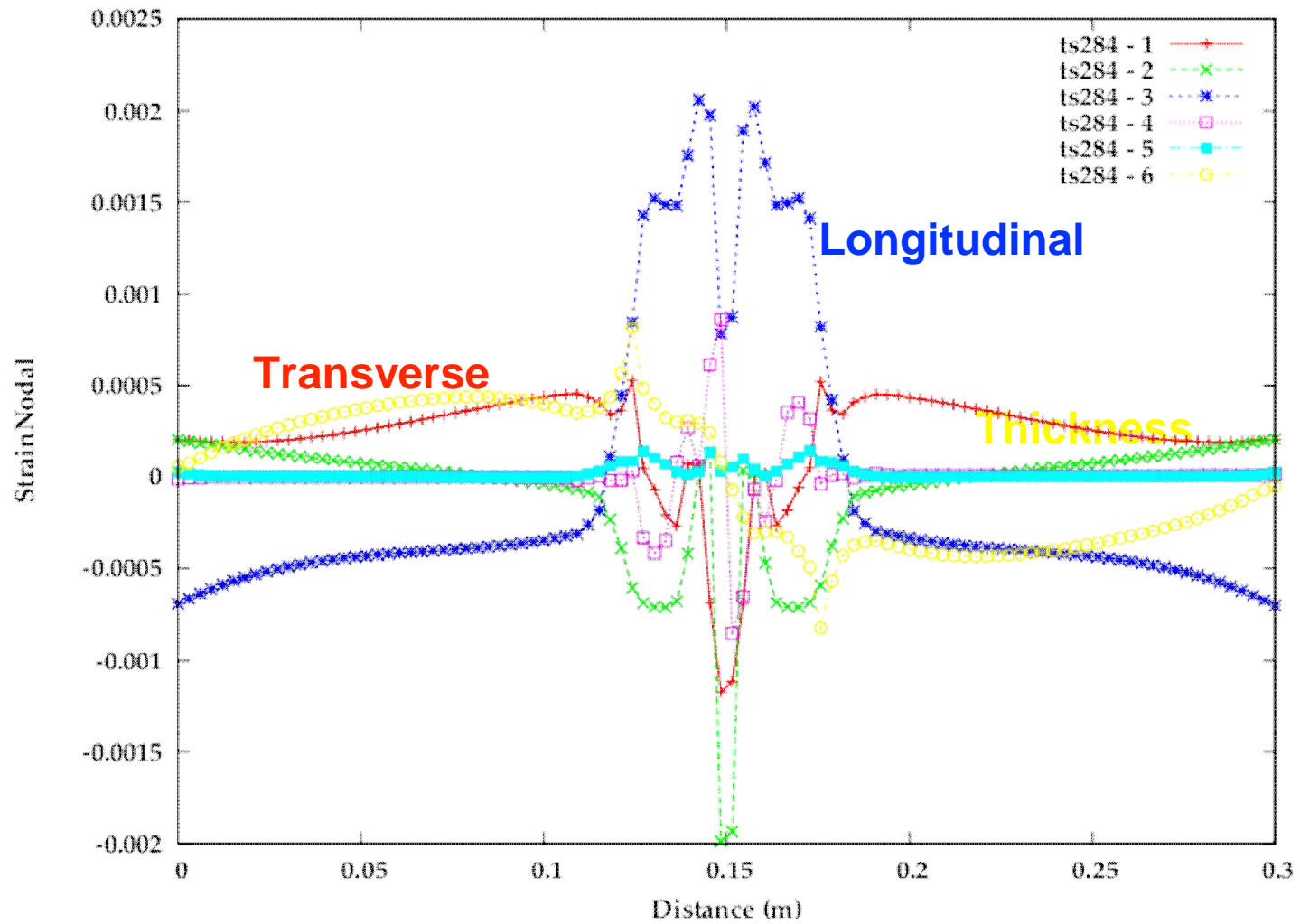


Longitudinal total strain **RED** real data and **GREEN** virtual data after  
release  
of clamps in third layer on right side 40 mm from weld line





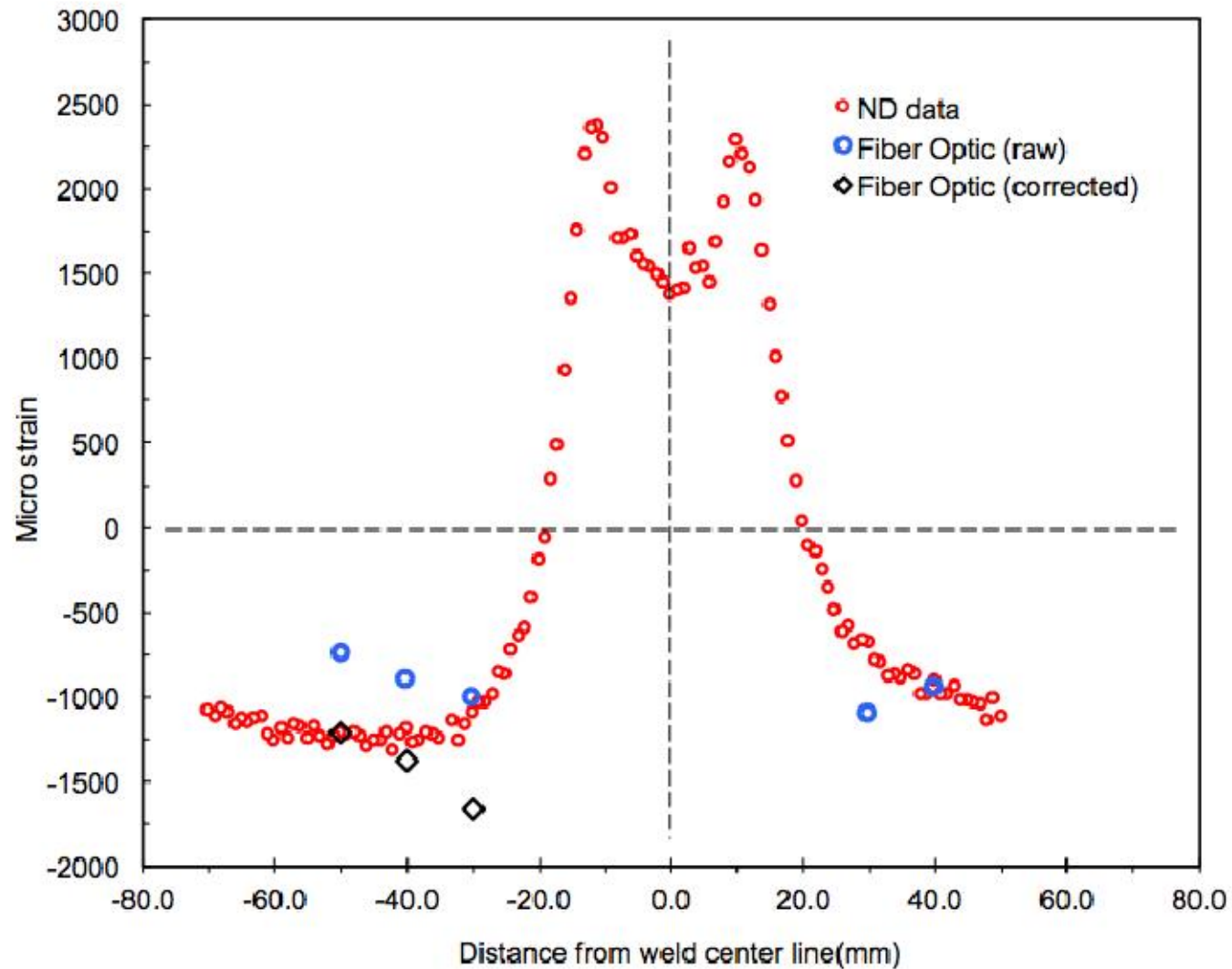
Elastic strain along transverse bottom-plane mid-line  
to compare to Neutron Diffraction (ND) Data  
after cool down and clamps released



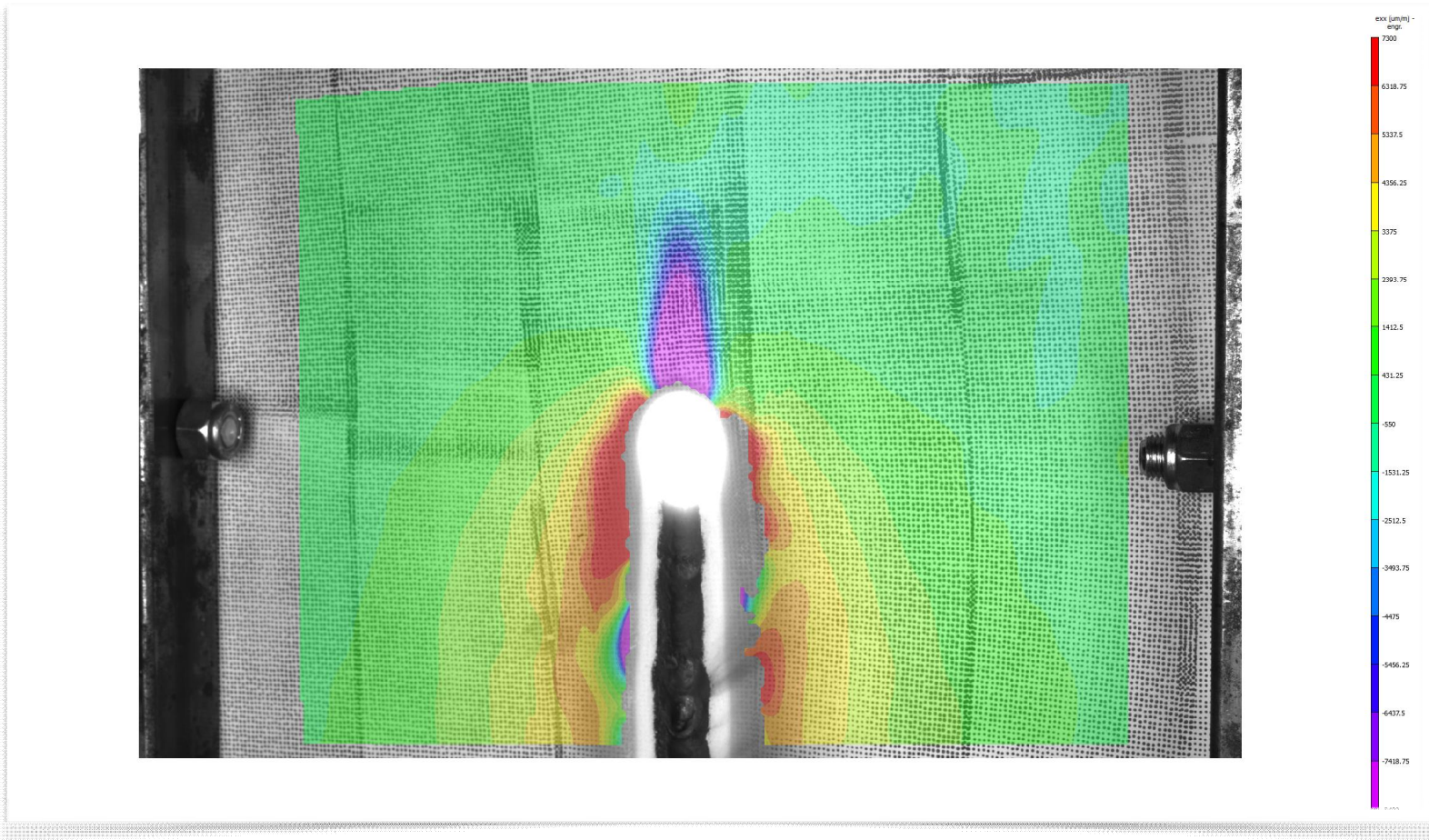
Red -



## Longitudinal elastic strain along transverse mid-plane line measured Neutron Diffraction (ND) Data

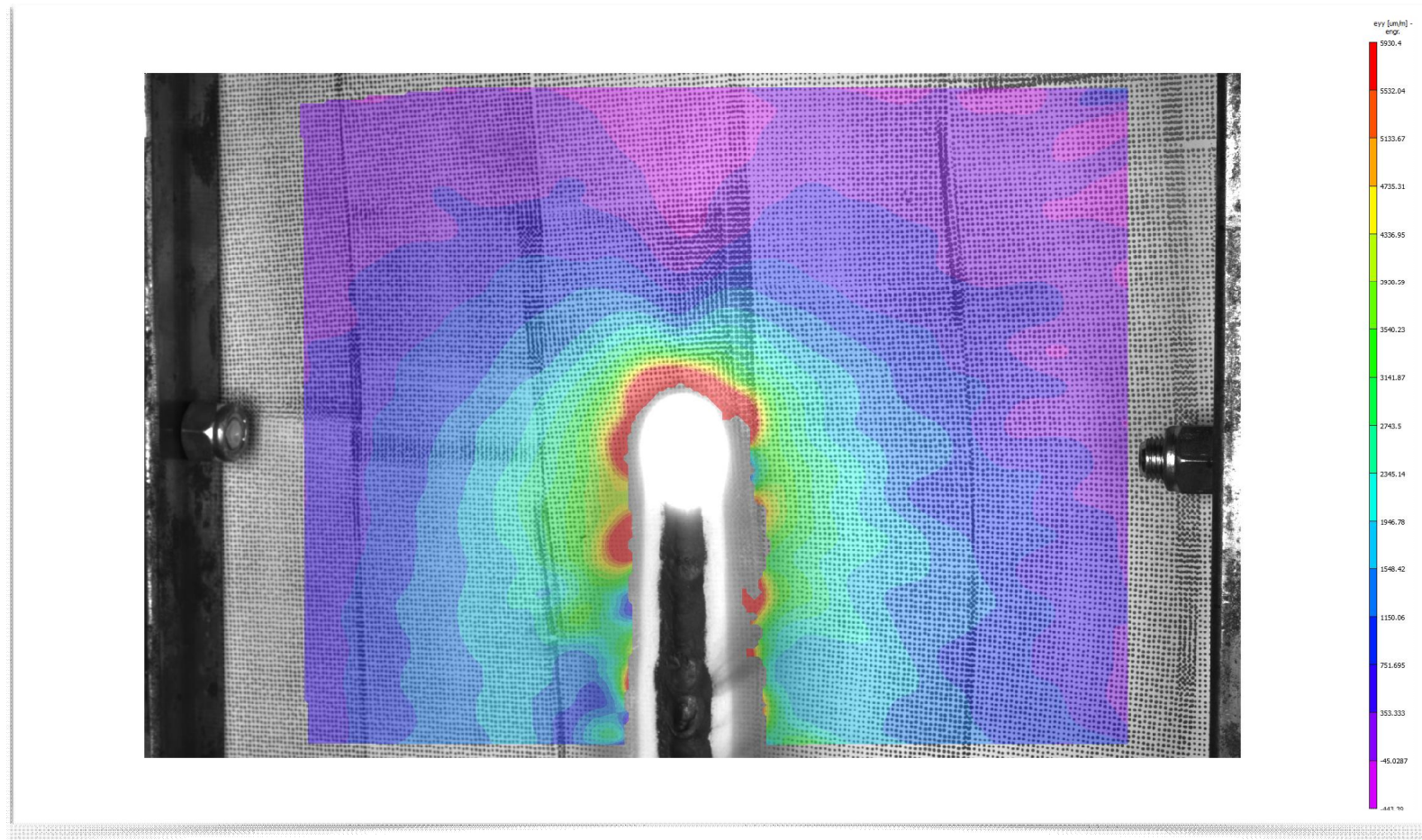


# DIC Image of Transverse Strain





# DIC image of Longitudinal Strain





# Thermographic Image of Weld with Flir Camera

