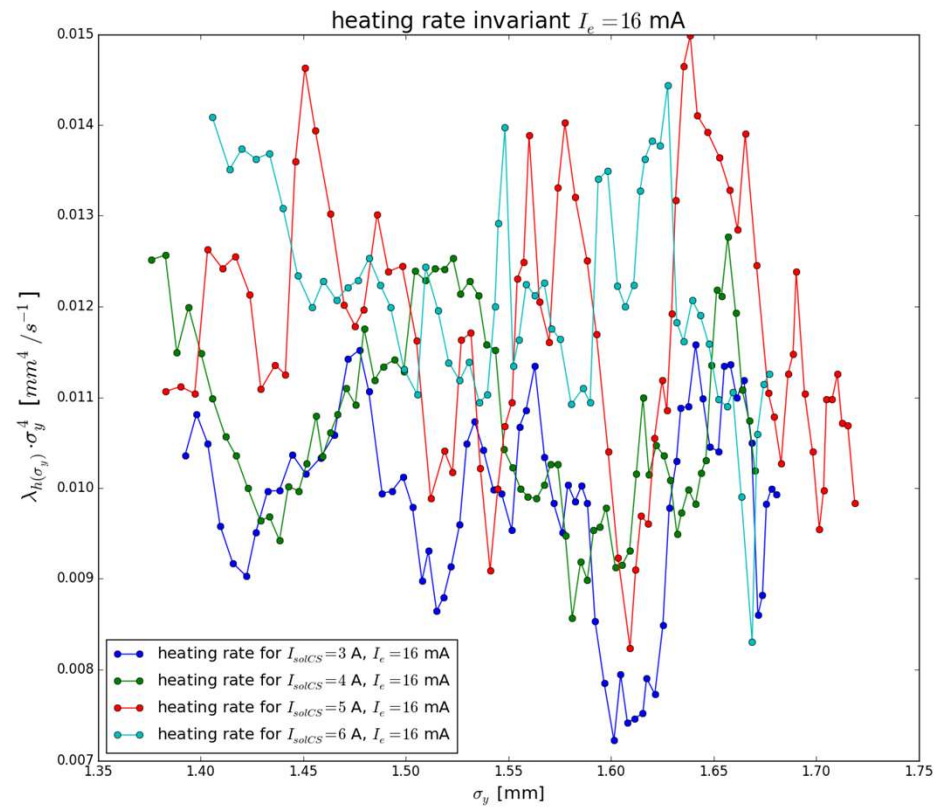
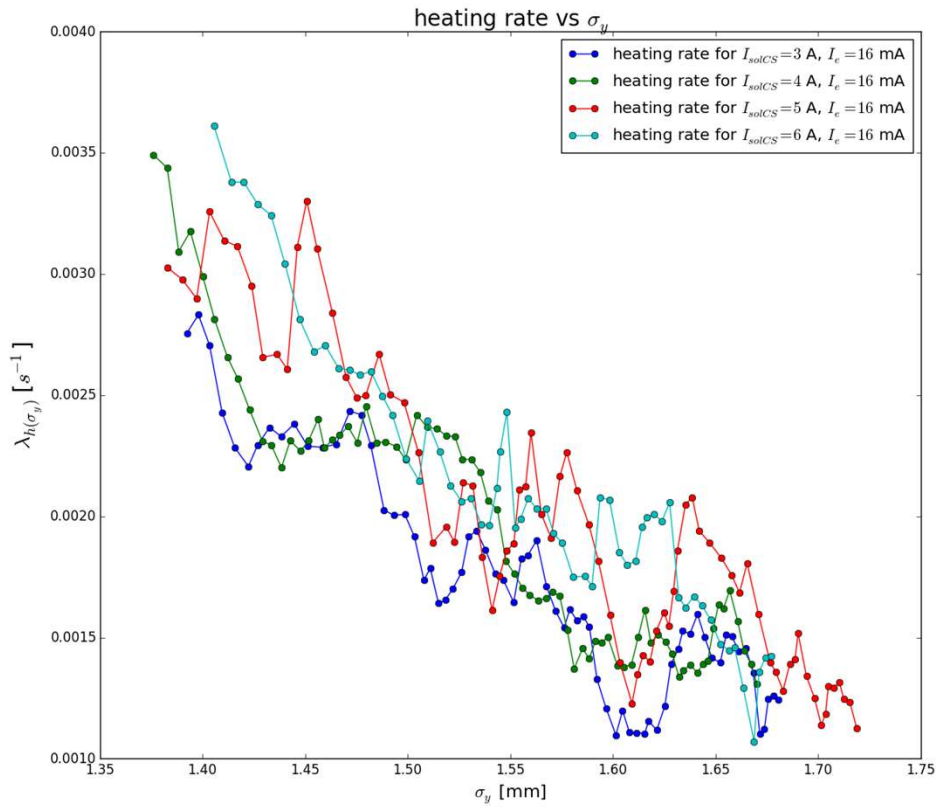


# e-i heating studies

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03/26/21

# It's a random walk effect indeed

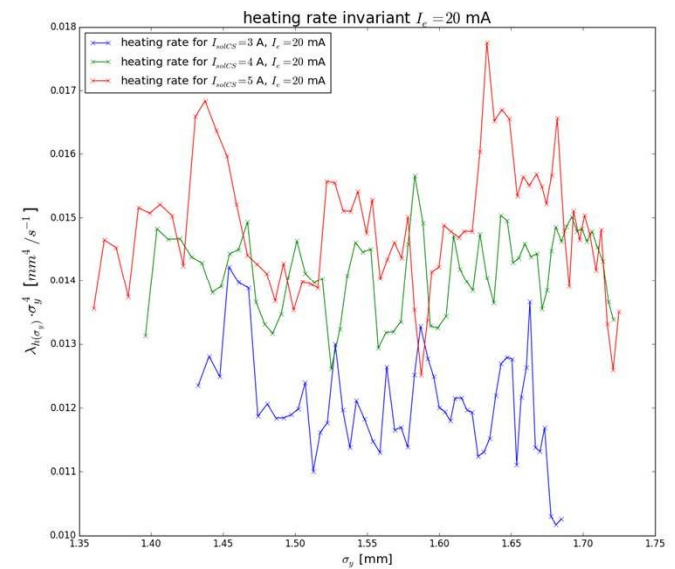
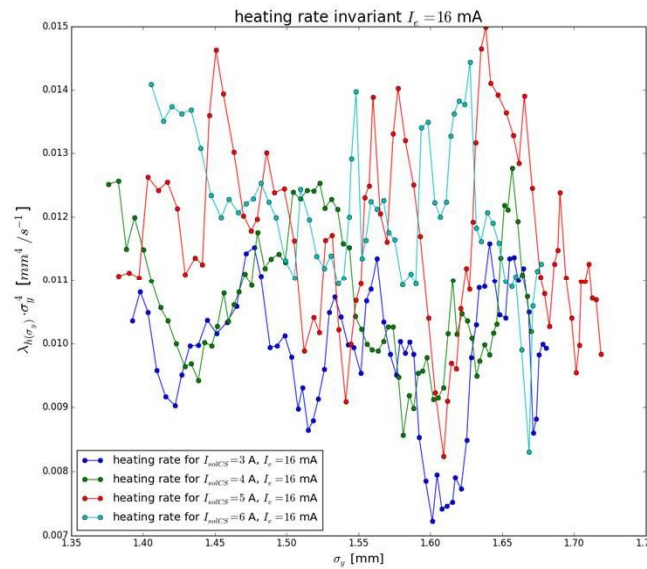
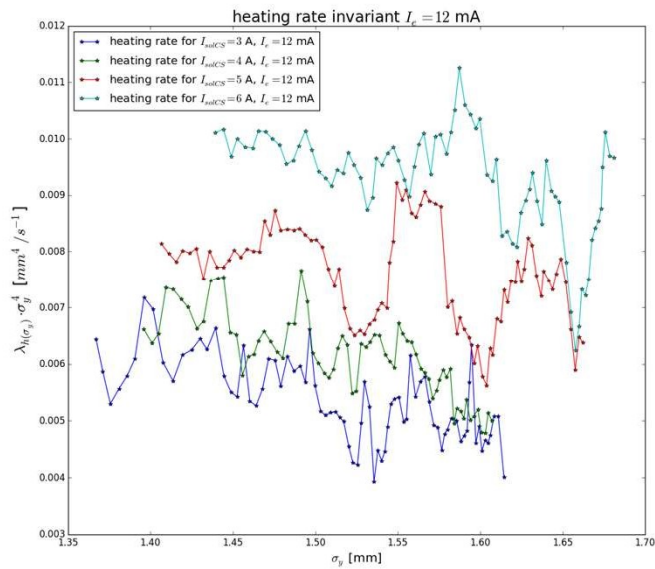


$$\lambda_{\sigma_y} \cdot \sigma_y^4 = \text{const}$$

$$\lambda_{\sigma_y} \equiv \frac{1}{\sigma_y} \frac{d\sigma_y}{dt} \propto \frac{1}{\sigma_y^4} \Leftrightarrow \frac{1}{\varepsilon} \frac{d\varepsilon}{dt} \propto \frac{1}{\varepsilon^2} \Rightarrow \varepsilon^2 = \varepsilon_0^2 + A \cdot t$$

But it is not a focusing kick noise! – There is no quadratic dependence on density which changes by 2 between Iso= 3A and 6A

# There is some weak dependence on focusing (Density? Nonlinearity? Overlap quality?)



- We believe the heating-focusing dependence was masked by the non-optimal h-jet settings
- During last studies Andrei helped us with setting the h-jet properly for low ion's intensity
- Hopefully, now we have a better (and definitely a more complete) dataset

# Linear dependence on e-beam current

