

# HYSt

## Reconsidering high-strength steels

Carey Walters

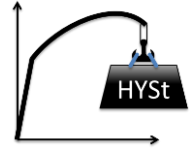
Associate Professor

Ships and Offshore Structures

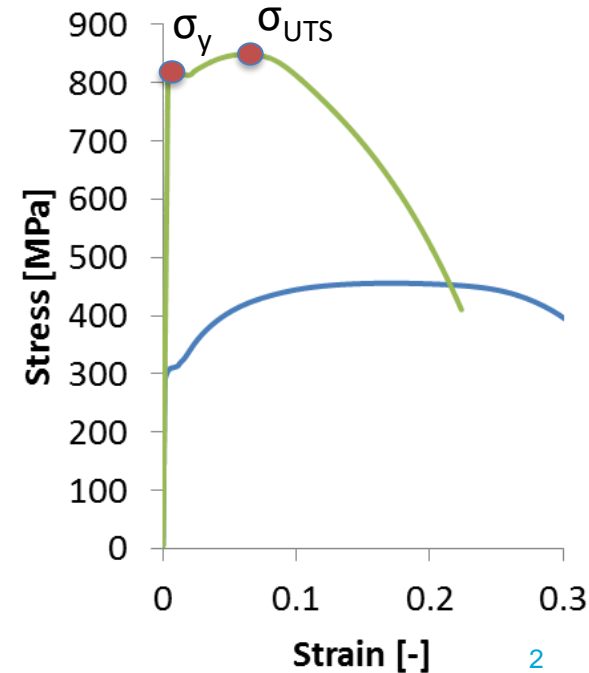
c.i.walters@tudelft.nl



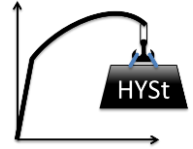
# Why?



- Goal
  - Support the safe application of S690 - S1300
- Facts
  - Standards have limitations on  $\sigma_y/\sigma_{UTS}$  (Y/T ratio)
  - We don't know origins of these limitations
- Question
  - What is the maximum safe Y/T ratio?

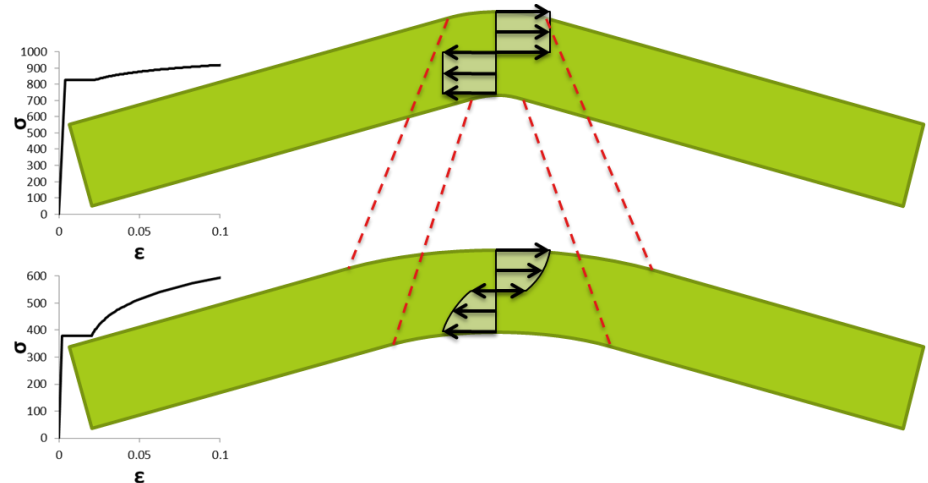


# How?

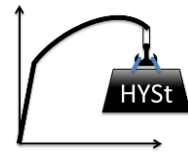


Understand Y/T ratio considering the following failure modes:

- Tensile strain localization (e.g. necking)
- Tearing from a stress concentration
- Formation of acute plastic hinges
- Ductile failure



# Consortium



Committed

The logo for Huisman, consisting of a stylized blue 'H' with a diagonal line through it, followed by the word 'Huisman' in a bold, dark grey sans-serif font.

The logo for Lloyd's Register, featuring a large blue 'LR' monogram followed by the text 'Lloyd's Register' in a dark grey sans-serif font.



The logo for Damen, consisting of the word 'DAMEN' in a bold, blue, sans-serif font.

The logo for TU Delft, featuring a stylized black flame icon above the text 'TU Delft' in a bold, black, sans-serif font.

Considering

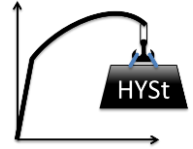
The logo for Allseas, consisting of a stylized grey 'A' with a red triangle inside, followed by the word 'Allseas' in a grey, italicized sans-serif font.

The logo for Posco, consisting of the word 'posco' in a bold, blue, sans-serif font.

Invited

**You**

# Project management



- Fee
  - 17 k€/year per year
  - Half-fee for class societies
- Planning
  - Four years
  - Planned start: Q1 2020
- Contact

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