

## Two noisy case studies from MathConsult

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MathConsult has been developing math-based solutions for producing industries and for financial firms during the last 25 years. In this talk, we present two case studies from the industry branch. In both cases, sound and noise play a role.

Heavy plates manufactured via thermomechanical processing find broad application as structural components in heavy and plant machinery and in line pipe and offshore industry. The successful control of the hot rolling process (especially the temperature field over time and the temperature history) does influence the desired mechanical properties quite significantly.

When processing ultrasound images a proper postprocessing is crucial to enhance the image quality, especially for small image features that are important for diagnostics. Decreasing the signal (image) noise while keeping, or even enhancing, the relevant structures are key features of modern ultrasound devices in medical imaging. We will present some of the methods used to obtain those goals.