

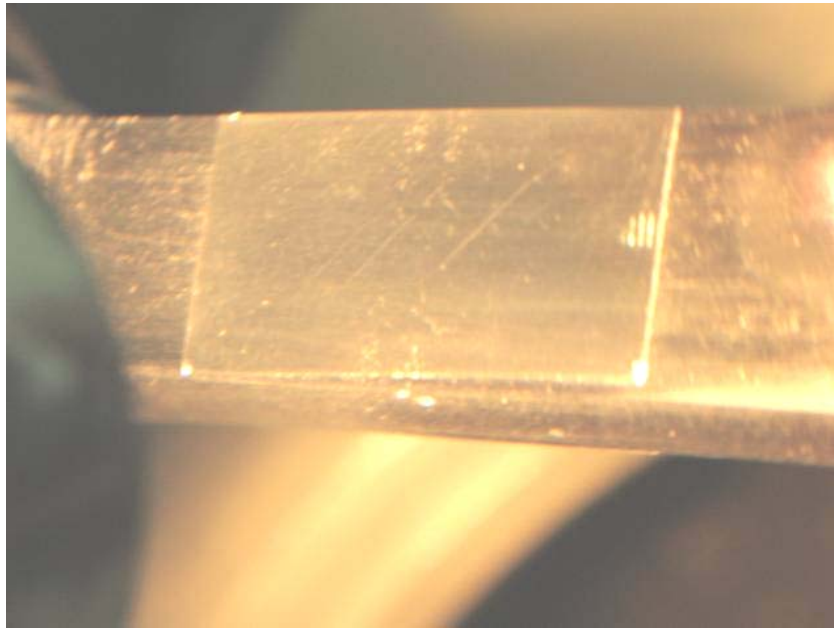
Kurgan state university, Russia

Sergey Tyutrin

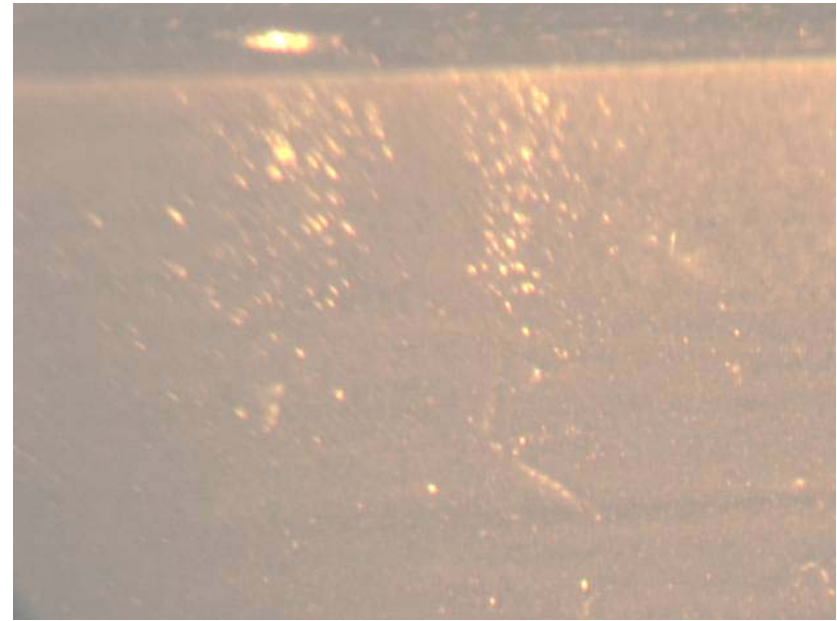
**APPLICATIONS OF FATIGUE GAUGES FOR
DETECTION OF SUBSURFACE CRACKS AND
DEFECTS**

Krasnoyarsk, 2020

Observed changes on the surface of the tin fatigue gauge to the left and right of the dangerous section

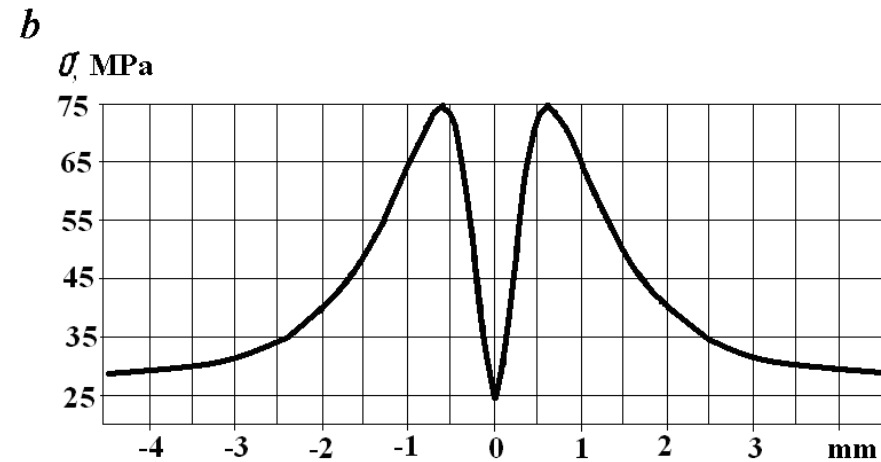
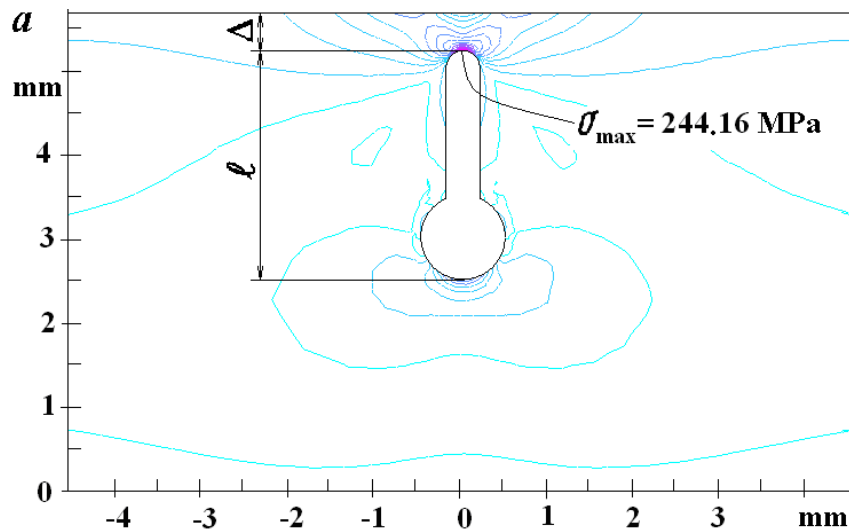


overall appearance



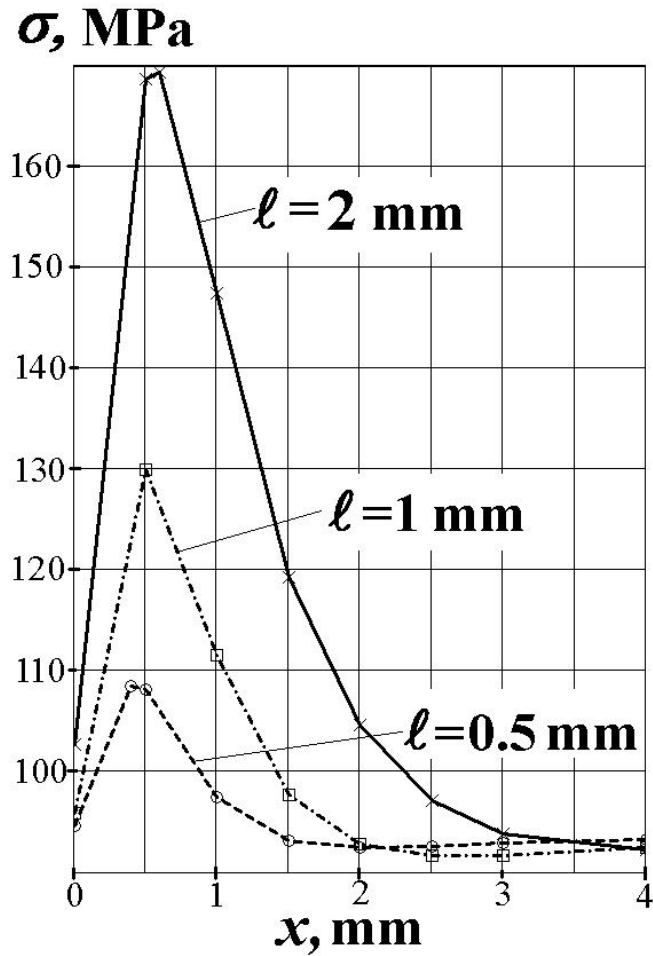
with magnification at 28x

Calculated distribution of stresses occurring in the specimen near the subsurface crack

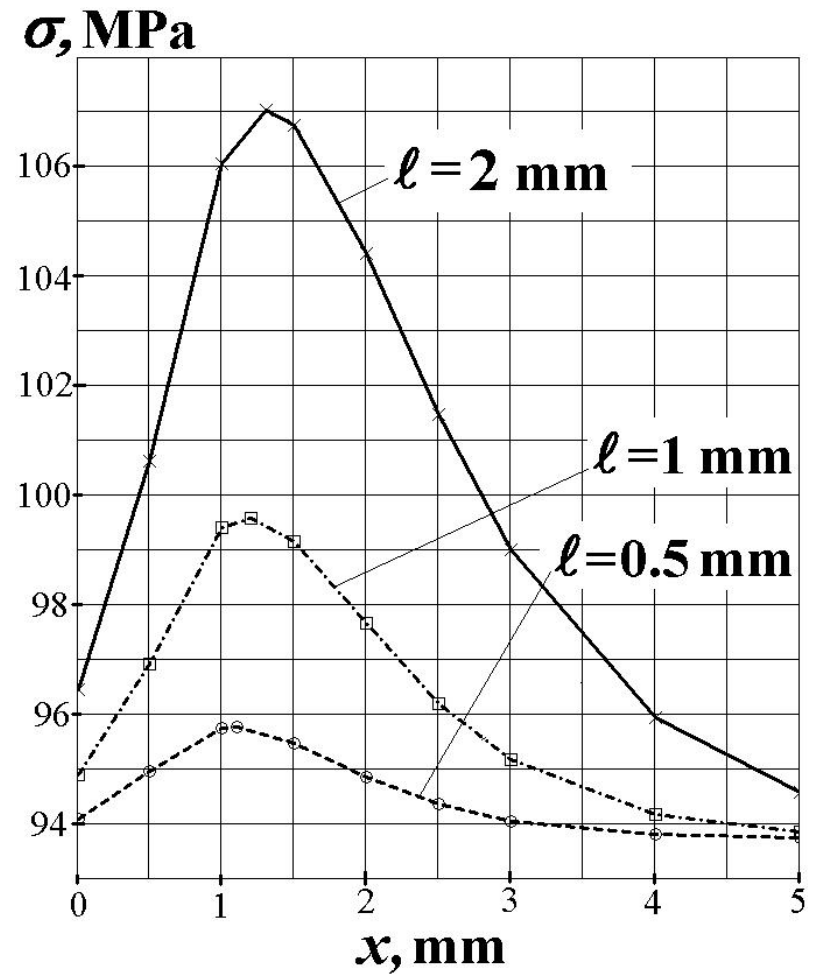


a – inside the specimen; *b* – on the surface of the specimen

The dependences of the surface stress on the distance x to the dangerous cross-section at different crack lengths ℓ and depths Δ to its top



$\Delta = 0.5$ mm



$\Delta = 1.5$ mm

The influence of the depth of the crack to its top Δ on the distance x from the dangerous cross-section to the point of the surface with the maximum stress

