



INTERDISCIPLINARY CENTRE FOR
ADVANCED MATERIALS SIMULATION

ICAMS Seminar

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Institute for Metallurgy and Metal Forming

University of Duisburg-Essen, Germany

Monday, April 15, 4:30 p.m. ICAMS seminar room 0.08

Models for Hot and Cold-Flat Rolling for Metallic Materials

Rolling is the most important forming process in metal processing. More than 95 % of all technical materials will be hot or cold-rolled during industrial manufacturing processes. Models for rolling either deal with so-called process integral items like rolling force, rolling torque and main drive motor power or with local data prevailing inside the roll gap like stresses and strains, strain rates, temperature fields, strain hardening and dynamic softening as well as material flow.

A mandatory condition for all types of calculation will be the knowledge about the material strength during the forming process.

The presentation involves the different types of rolling models for hot and cold-flat rolling, possible solutions with certain models as well as limits for solutions.

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