



SEMINAR

APPLIED MATHEMATICS AND MECHANICS

FS996

16 May 2024

A DCAMM seminar No. 774 will be presented by

Senior Principal Specialist Erling Østby
DNV, Høvik, Norway

The title of the lecture is:

Energy transition – Some structural integrity challenges for C-Mn pipelines

Abstract:

The energy transitions will call for the need for transporting large amounts of CO₂ and H₂, and pipelines represent a viable option in this respect. However, the transport of the above-mentioned media poses some challenges for regular C-Mn pipelines that must be solved to ensure safe and cost-effective solutions. Two of these are discussed in this talk. The first is considering the topics of running ductile fracture (RDF) in dense phase CO₂ pipelines. There is a challenge to understand the necessary requirements to obtain a crack arrest in such pipelines. The talk will present some of the general challenges of the RDF problem, and look a bit more into the question of understanding crack path oscillations and the possible importance of this. The second part is focusing on the challenge of ensuring integrity against leakage as a consequence of growth of defects in hydrogen pipelines. Some general observations regarding the impact of H₂-environments on the mechanical properties of C-MN steels will be presented. The main focus is directed to the question on how to define a criterion for when defects will be stable under constant loading.

DATE:	Tuesday, 21 May 2024
TIME:	10:00 – 10:45
PLACE:	Building 414, Room 061B DTU, Technical University of Denmark

Danish pastry, coffee and tea will be served 15 minutes before the seminar starts.

All interested persons are invited.

Jan Becker Høgsberg

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