LMS Seminar series 2024 – 25

Characterization of rolling and longitudinal shear creep for cross-laminated timber panels

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Date and Time: February 06, 2025 (2 – 3 pm)
Venue: Amphi Monge (Polytechnique)

Abstract

This talk presents the characterization of the short and long term rolling and longitudinal shear modulus of CLT panels. A four-point bending test is achieved on sandwich beams with steel skins and wooden core. This allows to isolate the CLT cross-layer and to characterize the shear behavior. The experiment is performed in a controlled environment during 6 months. A power law fits very well time series and reveals that shear creep is significantly faster than longitudinal creep in timber.

About the speaker

Arthur Lebée is a graduate of Ecole Polytechnique and Ecole nationale des ponts et chaussées, holds a doctorate in Materials and Structures and is accredited Habilité à Diriger des Recherches. He is currently Ingénieur en Chef du Porps des Ponts des Eaux et Forêts and researcher at Laboratoire Navier. Regarding his teaching activities, he is Maitre de Conférences de l'Ecole nationale des ponts et chaussées and Professeur Chargé de Cours at Ecole Polytechnique. His research addresses dimension reduction methods applied to mechanics, and more specifically to the homogenization of materials and structures. His work focuses on the modeling of thick heterogeneous plates, enriched beams and architected materials and the emergence of generalized continua both in small deformations and in finite deformations. He applies these methods to inflatable structures, timber structures and the mechanics of origami.

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