

# Séminaire du laboratoire PIMM

Jeudi 8 avril 2021 à 13h30 sur Teams

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présentera dans le cadre du séminaire ses travaux intitulés :

## **Understanding the mechanical properties of TRIP/TWIP Ti-alloys and their diversity using in-situ analyses**

TRIP/TWIP titanium alloys have attracted a lot of interest in the past 10 years, as they enable to reach an unprecedented combination of work hardening and ductility. However, comparison of the various compositions proposed in the literature shows that a wide range of behaviors are actually obtained. By using a combination of characterization techniques, including specific mechanical testing such as cyclic tests, in-situ SEM and EBSD, and in-situ synchrotron XRD, on a few relevant Ti TRIP/TWIP alloys, we propose to reach a better understanding of what makes this family of alloys so diverse in properties. In particular, the parameters influencing the work-hardening, such as the type of martensite formed, the type of twinning and the deformed microstructures are investigated. The in-situ approaches and indirect characterizations, such as specific mechanical testing, are of particular interest in this case to detect and characterize the reversible stress induced martensite.