# Soutenance

THESE

Lundi 25 Novembre 2019 à 14h

Salle des séminaires

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## Characterisation of photoconvertible fluorescent proteins for single-molecule localisation microscopy

**Thèse de Doctorat de l'Université de Grenoble**

Fluorescence microscopy uses labels such as fluorescent proteins to highlight biological components and see how they are organised. The field has been recently revolutionised by the introduction of "super-resolution" techniques, which improved image resolution beyond the historical barrier of visible light diffraction. PALM (PhotoActivated Localisation Microscopy) is one of them, and works by slowly activating the fluorescent protein labels. This allows to detect single molecules, precisely localise them, and reconstruct a high resolution image. However, once activated, fluorescent proteins blink: they repeatedly loose and recover their fluorescence, which limits the quality of PALM images. Therefore, this thesis aimed at characterising these fluorescent proteins using single-molecule and ensemble fluorescence imaging, to understand how blinking works, and to limit its impact on PALM experiments.