

## **Abstract**

The Herschel Astrophysical Terahertz Large Area Survey (H-ATLAS) is the widest-area extragalactic survey undertaken with the Herschel space observatory, covering around 600 square degrees of the sky from far-infrared to sub-millimetre wavelengths. One of its scientific goals is the systematic search of gravitationally lensed dust-obscured galaxies using a simple and efficient method that was first proposed in the 90s, which exploits the steep number counts of sub-mm selected galaxies. After discussing the importance of gravitational lensing in the study of distant galaxies and the key role played by dust-obscured galaxies in our understanding of galaxy formation and evolution, I will review the status of the search of lensed galaxies in H-ATLAS and of the associated campaign of follow-up multi-wavelength observations. I will then describe the technique we use to reconstruct the intrinsic morphology of the background galaxies from the observed lensed images and I will show its application to both imaging and interferometric data. The talk is meant for a wide audience so please come along even if you are not very familiar with far-infrared/sub-mm astronomy and/or gravitational lensing.