

Dr. Catherine Heymans (University of Edinburgh)

Title: Charting the Dark Universe with CFHTLenS

Dark Matter and Dark Energy constitute over 95% of the energy density of the Universe, and determining their nature constitutes the major challenge for cosmology over the next decade. Weak gravitational lensing is a powerful technique that can map dark matter structures from its gravitational effects alone and probe dark energy through its effect on the growth of these structures. From an observational perspective, I'll discuss the challenges and successes of this unique technique showing the first results from the complete Canada-France-Hawaii Telescope Lensing Survey (CFHTLenS). I'll present cosmological parameter constraints and maps of dark matter maps on unprecedented scales.