In this talk I describe possible implications, for early universe cosmology, of the detection of a stochastic primordial gravitational waves (PGW) background. I discuss the prospects for constraining a compelling new class of early universe scenarios known as axion-gauge field inflation. The PGW spectrum originating from these set-ups has strikingly different features with respect to those from the minimal inflationary scenario. I elaborate in particular on B-mode observations and interferometers tests. I will then introduce tensor fossils: these are intriguing gravitational waves imprints on the large scale structure, potentially detectable by upcoming surveys, with important implications for inflation. The existence of these models calls for a precise characterization of the primordial gravitational waves signal: in order to fully exploit the potential of PGW for the discovery of new physics, we must clearly identify their sources.

Date:  Wednesday 2 October 2019
Time:  2pm
Venue: L1, Seminar Room 107, 10 College Walk, Clayton

Info: Csaba.Balazs@monash.edu