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Studying Stellar rotation and magnetic activity cycles with asteroseismic measurements

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Continuous photometric coverage of stars provided by asteroseismic space missions such as CoRoT, Kepler and the incoming TESS, are a great opportunity to study their surface variability at different time scales. Indeed, long and uninterrupted Kepler observations of around 4 years allow us to study stellar magnetic activity (and possible regular cycles) of many stars. In particular, for rapidly rotating (young) stars, magnetic cycles can be of a few years and therefore accessible to our current length of observations. Moreover, in a few dozens of fast rotating stars, we have also access to acoustic modes which provides us with invaluable information on the stellar internal structure, including the depth of the convection zone, which is a key parameter to understand stellar activity cycles. In this talk I propose to review some of the open questions we have and how CoRoT and Kepler measurements, with the support of ground based observations, are shedding new light onto this field.