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Title: Calibrating Gyrochronology using Kepler Asteroseismic targets
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Abstract: Measuring ages for intermediate and low-mass stars on the main sequence is challenging, but important for a wide range of studies, from Galactic dynamics to stellar and planetary evolution. Among the available methods, gyrochronology is a powerful one, because it requires knowledge of only the star's mass (or colour) and its rotation period. However, it is not well calibrated at late ages, and suffers from large uncertainties. The continuous, high precision light curves obtained by Kepler mission are ideally suited to measuring photometric rotation periods. For a few hundred of the brighter Kepler targets, asteroseismology will also provide precise masses and ages. We are searching for periodic variability in the light curves of 160 stars in which the Kepler Asteroseismology Consortium have detected Sun-like oscillations. We hope to use the resulting sample of stars with precise asteroseismic masses and ages and photometric rotation periods to improve the calibration of the gyrochronology relations, and to apply them to a wide range of systems, including planet-host stars.