

Influence of differential rotation on the stochastic excitation of acoustic modes in solar-like stars

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Turbulent convection is the source of excitation of acoustic oscillations in solar-like pulsators. As showed by recent observations, these modes are not detected in many of these stars and this non-detection seems to depend on their rotation rate and magnetic activity. The physical mechanism behind this non-detection could be the modification of turbulent convection by rotation and magnetism. As recently demonstrated in the case of uniform rotation, this modification can inhibit the injection of energy into stellar acoustic modes in the case of rapidly rotating stars. However a piece of the puzzle is still missing. Indeed, the convective envelope of solar-type stars are differentially rotating with cylindrical or conical solar or anti-solar rotation profiles. In this work, we examine the impact of these different rotation profiles on the injection of energy from turbulent convection into stellar acoustic modes. We then discuss consequences for the observational strategy of the forthcoming space mission *PLATO*.