Seismic measurements of magnetic fields inside γ Doradus stars

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Magnetic fields have been measured recently in the core of red giant stars thanks to their effects on stellar oscillation frequencies. Beyond red giants, seismic signatures of magnetic fields can be searched in other pulsating stars. γ Doradus stars are good candidates because (i) they oscillate in the low-frequency range, which is most affected by magnetic fields (ii) their modes are gravity and Rossby modes which are sensitive to the radiative layers just outside the convective core where a magnetic field is most probably generated by a convective dynamo, (iii) these gravity and Rossby modes are identified in more than 600 γ Dor stars observed by Kepler and in about 60 γ Dor stars observed by TESS, and will be observed by PLATO as benchmark stars (iv) the theoretical effect of magnetic fields on these modes has been studied recently. I shall present a detailed seismic analysis of a γ Dor star which shows the expected signature of a magnetic field.