
The magnetic fields of F-dwarfs: Studying the transition from fossil to dynamo fields

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Abstract

The magnetic fields of cool stars are thought to be generated through a dynamo process which produces complex small scale field structures. In contrast hot stars appear to have large and stable dipolar magnetic fields that are thought to be fossil in origin, with these fields being found in only a small fraction of the stars. The transition from fossil to dynamo fields should be related to the presence of an outer convection zone on the stars and should occur around a spectral type of mid-F. As an extension to the cool dwarf part of the BRITepol project we are trying to detect magnetic fields on the brightest F-dwarfs with spectral types ranging from F2V to F9V to look for evidence of a transition from a fossil to a dynamo field. Our long-term goals are to determine the position of this transition and to study the interaction between dynamo generated and fossil fields. In this talk I will give an overview of the project along with some very first results of the observations of mid-F stars and initial results from the cool dwarf part of the BRITepol project.

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