
The magnetic properties of Galactic OB stars from the Magnetism in Massive Stars project

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Abstract

The Magnetism in Massive Stars (MiMeS) project represents the largest systematic survey of stellar magnetism ever undertaken. Comprising nearly 4500 high resolution polarised spectra of nearly 550 Galactic B and O-type stars, the MiMeS survey aims to address interesting and fundamental questions about the magnetism of hot, massive stars: How and when are massive star magnetic fields generated, and how do they evolve throughout stellar evolution? How do magnetic fields couple to and interact with the powerful winds of OB stars, and what are the consequences for the wind structure, momentum flux and energetics? What are the detailed physical mechanisms that lead to the anomalously slow rotation of many magnetic massive stars? What is the ultimate impact of stellar magnetic fields - both direct and indirect - on the evolution of massive stars? In this talk we report results from the analysis of the OB stars observed within the MiMeS survey. The sample consists of 85 O stars and 455 B stars ranging in spectral type from B9 to O5, and in evolutionary stage from the pre-main sequence to the post-main sequence. In addition to general statistical results concerning field incidence, strength and topology, we will elaborate our conclusions for subsamples of special interest, including the Herbig and classical Be stars, pulsating B stars, chemically peculiar B stars and Of?p stars.

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