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Effects of spot structure of lines of rare earths and non-LTE effects on lithium abundance estimates for two roAp stars

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Abstract

Taking into account blending of the lithium 6108 Å line profile by adjacent rare-earth lines together with their spotted surface structure does not appreciably affect lithium abundance estimates for the atmospheres of HD 83368 and HD 60435 but provides a better fit of the observed and stimulated line profiles. Our computed non-LTE corrections reduce the lithium abundance estimates by 0.1-0.2 dex for both stars. Given the uncertainties in the lithium abundances, it is not possible to be certain whether the lithium abundances in map stars, or at least in their spots, exceed the cosmic (primordial) value. © 2002 MAIK "Nauka/Interperiodica".

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