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Circumstellar effects on the Li and Ca abundances in massive Galactic O-rich AGB stars.

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Abstract

We explore the circumstellar effects on the Li and Ca abundances determination in a complete sample of massive Galactic AGB stars. The Li abundance is an indicator of the hot bottom burning (HBB) activation, while the total Ca abundance could be affected by overproduction of the short-lived radionuclide ^{41}Ca by the *s*-process. The Li abundances were previously studied with hydrostatic models, while the Ca abundances are determined here for the first time. The pseudo-dynamical abundances of Li and Ca are very similar to the hidrostatic ones, indicating that the circumstellar effects are almost negligible. The new Li abundances confirm the (super-)Li-rich character of the sample Li-detected stars, supporting the HBB activation in massive Galactic AGB stars. Most sample stars display nearly solar Ca abundances that are consistent with predictions from the *s*-process nucleosynthesis models. A minority of the sample stars show a significant Ca depletion. Possible reasons for their (unexpected) low Ca content are given. (See poster).