Winds of low-metallicity OB-type stars: HST-COS spectroscopy in IC1613

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We present the first quantitative UV spectroscopic analysis of resolved OB stars in IC1613. Because of its alleged very low metallicity (<~1/10 Zo, from HII regions), studies in this Local Group dwarf galaxy could become a significant step forward from the SMC towards the extremely metal-poor massive stars of the early Universe. We present HST-COS data covering the ~1150-1800A wavelength range with resolution R~2500. We find that the targets do exhibit wind features, and these are similar in strength to SMC stars. Wind terminal velocities were derived from the observed PCygni profiles with the SEI method. The vinf-Z relationship has been revisited. The terminal velocity of IC1613 O-stars is clearly lower than Milky Way counterparts, but there is no clear difference between IC1613 and SMC or LMC analogue stars. We find no clear segregation with host galaxy in the terminal velocities of B-supergiants, nor in the vinf/vesc ratio of the whole OB star sample in any of the studied galaxies. Finally, we present first evidence that the Fe-abundance of IC1613 OB stars is similar to the SMC, in agreement with previous results on red supergiants. With the confirmed ~1/10 solar oxygen abundances of B-supergiants, our results indicate that IC1613's [alpha/Fe] ratio is sub-solar.

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