# ARE THERE TWO POPULATIONS OF SUBDWARF B STARS VISIBLE IN KINEMATIC SAMPLES?

K.S. DE BOER, M. GEFFERT, M. ODENKIRCHEN, J.H.K. SCHMIDT, A. THEISSEN, J. COLIN, C. DUCOURANT AND J.-F. LECAMPION
*Sternwarte der Univ. Bonn, D-53121 Bonn, and*
*Observatoire de l'Univ. de Bordeaux, F-33270 Floirac*

The discussions about stellar populations and their spatial distribution can be best advanced by studies of special and well defined star types. The study of subdwarf B stars provides great promise: it is relatively easy both to find sdB stars and to determine their physical parameters.

An investigation of three statistically complete samples of sdB stars down to a limiting magnitude of V=14 showed that they have in the Milky Way an exponential distribution in z with a scale height of $220^{+50}_{-30}$ pc (for details see de Boer et al., these proceedings). That fact would place these stars in the category of older Population I. One then wonders where those old field sdB stars are, which have a nature similar to the globular cluster sdB stars. For that we have to investigate the space motions of such stars since they are expected to have orbits high into the halo.

We determined proper motions for stars common to the Bordeaux Carte du Ciel Zone and the Palomar Green catalogue. The proper motion derived, together with the radial velocity and distance from spectroscopy, allows to calculate the space motion and galactic orbit of the sdB stars.

Our results show that the majority of our sdB stars have orbits staying well within the limits of the Milky Way disk (Colin et al., 1994). The present extended sample does also contain 2 stars with orbits reaching to $z > 6$ and $> 25$ kpc each, typical for Population II. The sdB stars at high galactic latitudes represent therefore two Populations.

de Boer K.S., Theissen A., Heber U., Moehler S., these proceedings
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