

Characterization of SB1 detected in the Gaia-ESO Survey iDR5

T. Merle¹, M. Van der Swaelmen¹, S. Van Eck¹, A. Jorissen¹, & T. Zwitter²

¹ Institut d'Astronomie et d'Astrophysique, Université Libre de Bruxelles, Belgium

² Faculty of Mathematics and Physics, University of Ljubljana, Slovenia



1. Data

- FLAMES/GIRAFFE HR10&21 spectra
- optical and IR wavelengths, $R \sim 20000$
- 200000 single exposures from 50000 stars
- RV from recomputed CCFs (see Van der Swaelmen's poster)
- 4 observations per star with $\Delta T \leq 1$ week

2. Methods

- Statistical χ^2 -test per star with confidence level of 99.9%
- F2 distribution to assess the normality of RV uncertainties

3. Results

SB1 sample contaminated by photometric variability
→ use of Gaia DR2 (parallaxes, G, BP, RP photometry) for:

- discriminate dwarfs and giants
- discriminate genuine SB1s from intrinsic RV vs. photometric dispersion

4. Characterization of SB1s

- ~ 700 SB1s/30000 stars: dwarfs 72% & giants 28%
- GES SB1 frequency: $\sim 2\%$
 - per spectral type
 - per metallicity

