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Selected stars for the blind radial velocity ESPRESSO survey

We screened the most suitable G, K and M nearby stars for the detection of Earth-class exoplanets with ESPRESSO. For most of these stars, we investigate the existence of stellar binaries. We derived the activity level using chromospheric activity indexes $\log(R'_{HK})$ and $H\alpha$, as well as the projected rotational velocity $v \sin i$. For cases where planet companions are already known we also accessed the possibility that additional planets may exist in the habitable zone using dynamical arguments. We selected the best 45 stars that match our criteria for detectability of an Earth twin. Some of the stars presented and discussed in this poster will constitute the ESPRESSO GTO catalog the RV blind search for earth-class planets. They can also be used for any other work requiring a detailed spectroscopic characterization of stars in the solar neighborhood.

Primary author: Mr HOJJATPANAHA, Saeed (Institute of Astrophysics and Space Sciences University of Porto)

Presenter: Mr HOJJATPANAHA, Saeed (Institute of Astrophysics and Space Sciences University of Porto)