AIM: to quantify the telescope time needed to measure the planetary mass for a fraction of the ARIEL MRS (Edwards et al. 2019)

- low-mass planets (see Changeat et al. 2019)
- single spectrograph at 4-m class telescope (e.g. HARPS-N@TNG)
- 4 ranges of stellar masses, 3 ranges of stellar magnitudes (from which we obtained typical values of planet parameters)

Simulations of radial velocity (RV) time series:

- 50 RVs randomly spread over 90 days (+ additional 50 RVs)
- RV dispersion defined as in Cloutier et al. 2019
- Activity ($P_{rot}$=30d) + planetary signals injected as sinusoids
182 recovered planets

<table>
<thead>
<tr>
<th>V mag</th>
<th>Nr. targets</th>
<th>Texp</th>
</tr>
</thead>
<tbody>
<tr>
<td>[8. - 9.9]</td>
<td>77</td>
<td>15 min</td>
</tr>
<tr>
<td>[10. - 11.9]</td>
<td>68</td>
<td>30 min</td>
</tr>
<tr>
<td>[12. - 13.9]</td>
<td>37</td>
<td>60 min</td>
</tr>
</tbody>
</table>

The time required for an RV follow-up producing a robust mass estimation ($K \geq 5\sigma$) of about half of the ARIEL MRS hosting a low-mass planet with $mv < 14$, is about 1000 observing nights, 642 if we consider the brighter targets only ($mv < 12$).

WORK IN PROGRESS!
- the improvement of the RV sampling (more realistic monitoring, target coordinates)
- a larger exploration of the stellar and planetary parameters
- the use of more and/or larger telescopes
- ...