Organization of tests of stellar rotation algorithms

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Simulated PLATO light curves

- Thanks to the work by Suzanne Aigrain and Réza Samadi (see their presentations) we can simulate PLATO level-1 light curves;

- By combining their results, we can obtain continuous time series with 25s cadence that include:
    - Stellar activity and rotation;
    - Granulation;
    - Acustic oscillations (p-modes);
    - Photon shot noise;
    - We assume a perfect correction of instrumental effects in this first round of tests;

- Late-type main-sequence and subgiant stars in the spectral type range F to M ($\sim 3500 < T_{eff} < \sim 7000$ K) can be simulated.

Next steps

- Combine Suzanne's light curves with Réza's p-mode oscillation and granulation simulations;

- Organize a hare-and-hound exercise to test algorithms to measure stellar rotation and its uncertainty (WP 123 500 – coordinator Sergio Messina: sergio.messina@inaf.it);

- People interested in participating are welcome.

Foreseen schedule

- Announcement of the H&H exercise to the PLATO science community (by July 2017);

- Collecting expressions of interest in taking part to the H&H exercise (by October 2018);

- Preparation of the H&H exercise (from 130 to 1280 light curves depending on available resources and decisions to be taken) (by October 2018);

- Giving access to the light curves to the teams partecipating in the H&H exercise (since November 2018);

- Teams report their results to WP 123 500 (by the end of January 2019);

- Report on the H&H exercise (beginning of March 2019).