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On the effect of star spots on transit detection in the context of PLATO

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The effects of star spots on the detectability of transiting exoplanets is not well understood across stellar types and transit depths. I will present work done on simulating light curves for a range of stellar parameters and planet orbital parameters relevant to the upcoming PLATO mission. These simulations include realistic, time-evolving, star spot distributions across the stellar surface, and include transit signals across the spotted stellar surface. We performed injection recovery tests and transit modelling on simulated light curves with and without the spot model to investigate the effect of the star spot induced variability on the detectability of transit signal, and biases in the recovered orbital parameters due to modifications in the transit shape induced by the star spots.

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