

## ***Interactive comment on “Dust sputtering within the inner heliosphere” by Carsten Baumann et al.***

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Response to Reviewer #1

We very much appreciate the constructive comments on our manuscript and the overall positive judgement of our work. For the revised version all comments have been taken into account and have helped to improve the quality of our manuscript.

In the following we will address all comments point by point.

***...Since this work is based on modelling calculations, the word “modelling” must be added in the title and in the first sentence of the abstract....***

C1

In accordance with the reviewer we have added the term 'modeling' to the title and abstract. The title has been adjusted to: 'Dust sputtering within the inner heliosphere: a modeling study'. The first sentence of the abstract has been changed to: 'The aim of this study is to investigate through modeling how sputtering ...'

***...Line 49: I am not sure that this comment on nanometer-sized dust particles around other stars is necessary in the paper...***

The reviewer is correct and we have removed this sentence from the manuscript.

***...Line 118-125: What could be the effect on the results of the “additional parameters”? Are the results still valid even if these parameters are not considered? Perhaps the authors can provide an estimate of the uncertainties on the results presented here when not considering these parameters....***

The reviewer points on the not well known nature of the sputtering yield for dust grains. We have added a statement how the additional but rather unknown parameters within the sputtering yield may affect our results. 'Due to a lack of quantitative information on these enhancements factors for our study we use the conservative sputtering yields given by SRIM. As a consequence, our results provide an upper limit for dust sputtering lifetimes. We speculate that dust sputtering lifetimes could be one order of magnitude shorter when taking the microphysics of dust sputtering into account.'

***...Line 147: “ten orbital period”; it is orbital period of the dust? can you give the value in day or years as for the FeMgO nanodust?...***

C2

The reviewer is right and we have changed this cumbersome expression to 'ten years'.

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Interactive comment on Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2020-30>, 2020.