Response to the Editor about “Methods for Measuring the Orientation and Rotation Rate of 3D-Printed Particles in Turbulence”

1. For steps 5.1.3 and 5.1.5, we will need the user input commands used (File | Save | etc.) in order to film this properly. The current instructions in the protocol state what to do but not how to do it. You state that nothing is being clicked in the analysis, but how is the analysis started? If you wish to use screen recordings in the video, we will need these files now in order to properly script and plan your video. Please include it with an updated Scriptwriter’s guide. Furthermore, please include the supplementary files now as well. All coding files/scripts to be provided upon publication should be sent at this point.

This has been addressed by adding a step under 5.1.3: “Click ‘Run’ to begin analysis.” The supplemental programs will make it clear that 5.1.5 is initiated as well by this step, so there is only one place where clicking Run is needed. The supplemental programs and video files have all been included with the submission, as has an updated Scriptwriter’s guide with improved screen recordings. These screen recordings are also included separately with the submission because it seems that they may not be attached to the Word document as they are supposed to be. They are included in the submission with the same file name as they are designated with in the Scriptwriter’s guide.

2. For Figure 5, please state whether the uncertainty is standard deviation, standard error of the mean, etc.

We have given more detail about what was done to arrive at the uncertainties. The error bars measure errors due to the bin sizes of the histogram and the fit length dependence of the particles’ rotation rate measurements. The fit-length dependence is shown in Marcus, 2014.

3. Please explicitly discuss future applications of the protocol in the Discussion. The critical steps have been addressed by the decision to use the tetrads.

This has been done. A paragraph has been added discussing extensions of these methods to much larger particles, which is research that we are actively conducting, as well as extensions to a variety of particle shapes.