

The manuscript has many improvements compared to the previous versions and is suitable for publication after minor revisions/corrections, mostly being of technical nature.

A few comments:

- 1) While the authors acknowledge now that the measured spectra do not necessarily display graphite crystallinity (in the sense of intragranular defects) but an aggregate crystallinity, the manuscript will further benefit from a very brief explanation or definition of crystallinity as now used by the authors. So it should be made clear what the authors mean since I think this is not clear for every reader. Also, I'd recommend to make sure that this definition is kept throughout the manuscript and consistently used.
- 2) The discussion could benefit from a few sentences actually discussing the nature of D1 and D2 bands (intra-layer and edge defects) and how they may relate to deformation and grain size decrease. The difference and nature of D1 and D2 bands could also follow on L91.
- 3) Please also provide the shear stress-displacement curve that appears in the authors' response. This is the measured (raw) data and should be provided.  
Also, please make sure that the curves are readable, no double colors, maybe work with dashed lines or similar tricks so it's easier to find the curves for each experiment.

L74: apparent shear strain

L95: Are you sure this is the Y-Z sections? when you look onto the sliding surface I'd say it's X-Y.

L109: what was observed are Raman spectra, not structural modifications, unless this refers to structure as in microstructure.

L164: oriented nearly parallel to the shear directions. What should that mean? You probably mean 001 of graphite grains are parallel to the shear plane?

L167: "...aligned with 001 parallel to the slip direction" - I guess this should be plane not direction

L178: "...with random orientations" How is that meant? Grain shapes, grain (crystal) orientations?

L207: Tunstall and Koenig, 19780 missing in references

L227: replace "shear strain" with deformation or similar

L230: "structural order" should be aggregate crystallinity or the term that the authors need to define to prevent these speculations

L244: insert "and"

L272: "structural disorder" should be aggregate crystallinity or the term that the authors need to define to prevent these speculations

L272ff: odd sentence, maybe make two out of it.

Figure captions to

Figure 1 and 3: use apparent shear strain

Figure 4: which one is BSE/SE

L367: Fig 4b "well compacted layer of aligned grains" - I cannot see this in the image

L370: "...oriented sub-perpendicular to the shear direction" What should that mean?

L389: "error estimate of..." Where does that appear?

Figure 5 has no figure captions with line numbers: "kink band stacking" What should that be?

Best regards,  
Rüdiger Kilian