Dear reviewer:

Thank you very much for your careful checking and constructive comments! It is our great honor to have such professional comments and suggestions from the you. We are also so appreciated for your recognition. The responses of your precious comments are as following:

Comment 1: *Figure 9 needs a "WTCMR" label next to the y-axis on the left-hand sides of (a) and (c), and an "r0/D" label next to each of the x-axes.*

Reply: We modified Figure 9 as:

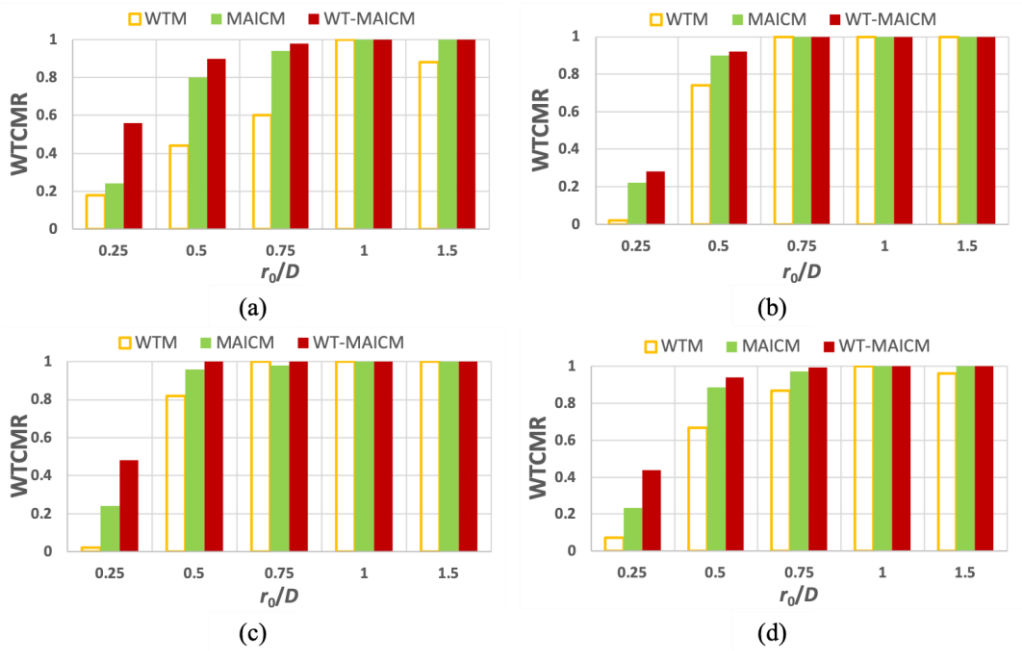


Figure 9. TC determination performance of three methods under different atmospheric turbulence conditions, where (a) is under $TC = 1$, (b) is under $TC = 5$, (c) is under $TC = 10$, and (d) is the average of (a), (b) and (c).

Comment 2: *Figure 10 leaves the reader with a question: the MAICMMAICM-determined closed path appears to me to be only one possible *local*-maximum-average-intensity loop; there would be another such *local*-maximum-average-intensity loop (and, in this case, a far better closed path for TC determination) further out, which would be much closer (if not identical) to the (much better) WT-MAICM determined closed path. Thus, it seems to me that the problem with MAICM is that it can get stuck in local minima -- and thus there might be another method -- a "global maximum average intensity circle method" -- that could look for *multiple* local maximum average intensity loops, and if more than one such loop exists, then choose the loop with the largest overall average intensity from those choices. I am guessing that such an algorithm would have a similar performance to the WT-MAICM (although it might be slower, depending on how it was implemented).*

Reply: Thank you very much for pointing out this issue. In fact, we did consider the method you described above when we thought over how to improve MAICM. However, it appeared to have several drawbacks. First is that the algorithm used in MAICM was carefully considered and designed to utter mostly avoid the searching being trucked in a local loop, nevertheless, there were still some conditions where the algorithm cannot work well. Second is that even though we can find several searching criteria that work complementally in different cases, we should perform the searching process once for each searching criterion to get several closed-path candidates, and this is definitely slower than WT-MACIM,

which just modifies the intensity-sum map with a prior obtained by a build-in MATLAB function and searches the closed path once. Moreover, the theoretically best result which can be obtain by this method is considered to be same with WT-MAICM, because the watershed transformation exactly retrieves the redundant watershed lines with the global maximum average intensity value, and furtherly search one closed path out of those redundant lines ensures the result to be the global maximum average intensity circle.

Comment 3: My one other scientific comment is that code, or pseudo-code, for the WT-MAICM algorithm that is used should probably be provided somewhere, either in supplementary article info, or in a link, or at very least just "code available from authors" should be stated: the article text explains it well, however even with that explanation, there are a few different choices that could be made in exactly how one would implement it in code; and, thus, the code that was used should be available.

Reply: We apologize that it is not convenient for us to directly share the code of algorithms in supplementary, but we would like to share the code through personal contact by email. Correspondingly we added a statement in the beginning of the conclusion section of the revised manuscript: "In this paper, we presented an experimental comparison of five closed path determination methods for the use of GCSM to detect the TC of an OV beam. These five methods are the previously proposed MAICM and FC-PRCM and three newly proposed methods: the WTM, WT-MAICM, and SC-PRCM. These methods come from two strategies: WTM, MAICM and WT-MAICM belong to the strategy of ridge extraction, and FC-PRCM and SC-PRCM are derived from the strategy of PRC assignation. Codes for algorithms are available from authors by email."

Comment 4: My main comment is not a scientific one: it is just that the article very sorely needs English editing by a native English speaker. The content is clear to native English speakers like me; but even so, nearly every sentence has some form of misuse of English in it, such as incorrect prepositions, very poor word choice, etc. Hamamatsu Photonics has several U.S. offices; perhaps finding a native English speaker from one of those offices to edit the article for better English might be possible?

Reply: We are so sorry for our carelessness in writing. We checked our manuscript again and also submitted our paper to MDPI for further English editing. We believe the revised manuscript is better and with enough readability.