Overview:

The authors present an open-source package, *cmpsR*, for comparing striated tool marks based on the method called Congruent Matching Profile Segments (Chen et.al, 2019). It is a sensible approach, and all methods are up to date. The article is important to the R community. It provides an objective way for analyzing tool marks evidence by using R.

Article:

This is a well-written article. It contains sufficient background and useful examples for demonstrating the usage of the package. The comments are minor:

- Page 1 the last third line: had already defined the Land Engraved Areas (LEAs) in the last fifth line.
- Page 4, *get_segs(x,len=50).* Is the *len = 50* is the default argument of the function? How does the length of segments is determined? Will the performance of the algorithm change for different values of len?
- Page 8, *cmps_signature_plot(…).* It will be good to add legends within the plot for the black/red solid line and the red dotted line, and the grey boxes in Figure 4a seem almost invisible.
- Figure 9 and Figure 10 on page 14 and page 15: Is there any overlap between KM and KNM? The counts for KM is very small. It might be good to convert the count into probability. (i.e. *hist(…, probability = TRUE)*)

Hamby44_npeak_result_*.R in the *supplementary-files* folder*:*

- Line 17: it seems there is no package called *CMPS* (it might be *cmpsR*?)

hamby44_npeak_result_generator.R : The parallelization in ~line 223 in is not working under the window environment, but the following code can make the program works by replacing the *mclapply(…) with*:

- *cl <- parallel::makeCluster(10)*
- *clusterExport(cl, list('b44', 'b.cb', 'extract_feature_cmps', 'CMPS_hamby44_results','i'))*

cmpsR package:

- line 70: there is a global assignment for *current.max* in the function *get_CMPS*. And it seems a bit confusing for the user who wants to access the code. I suggest that to avoid this global assignment when building a package. I think *current.max = max(pos.df$cmps)* is equivalent to what is written in the function.
- It might be good to add a CITATION file and a README.md file to the package.
- Some codes are commented, such as line 50 and line 53 in *cmps.R*. I suggest removing them as they are not executed, and they might confuse the user who wants to view the code.
- In script *get_ccf4.R*, function *get_ccf5* and *get_ccf4* appear to be mostly identical to each other, except one is calling the C++ code for computing cross-correlation, and the other is written in R. It will be good to add a few more explanations on these two functions in the documentation.

Reference:

Chen, Zhe, et al. "Fired bullet signature correlation using the Congruent Matching Profile Segments (CMPS) method." *Forensic science international* 305 (2019): 109964.