

Dear reviewer,

thanks for the careful reading and nice suggestions. Some reply follows.

The content of the paper is very interesting and innovative. However the description and the english grammar is not completely adequate. I would recommend to have an english speaking person reading and correcting your paper.

Here some examples and some other detailed comments:

I got the help of a more experienced colleague (though not native-speaker) to cross-check my grammar and I implemented your detailed comments.

- Introduction:

sentence after "Besides, the complexity....." it is not well written

It was rewritten and rephrased.

In Hep, the most common non-parametric density estimation is the the histogram !

Histograms are now mentioned.

Paragraph 2:

Can you please elaborate more on the motivation and the meaning of Formula (1). How is derived this formula for the replacement error ?

Space limits make it very hard to provide a complete demonstration, that can be found following the reference, or a in a complete and pedagogical description, in my Ph.D. thesis (<https://inspirehep.net/record/1339729/files/CERN-THESIS-2014-213.pdf>, page 200).

Nevertheless, I tried to expand commenting on the underlying approximation.

3.2 page 5. The explanation for using density estimation tree for fast simulation is not clear, in particular the last paragraph,

"Given a new set of variables....."

Please elaborate this example more or in a clearer way

Again, space limits prevent me from describe the detail, but I made an effort to expand this section giving some additional hints on the actual procedure.

A dedicated work will follow later this year (or beginning of the next one) on this particular application.

4. It is also not clear how the DET can be used to train Neural Networks. Give please here more details

One can sample the DET in random points of the data space and use the relative density estimation to train an MVA to respond to a set of input variables, with a density estimation.

I changed the word "used" to the less generic "sampled".