Line 21: ‘allows the extraction of large datasets and facilitates the measurement of properties’ – these are still just samples from the population though; they are not the ‘right’ answer.

Changed with “measurement” with “sampling”

Line 50: note that FracPaQ does not in fact use the mean length statistic from these measures, just Intensity and Density; length statistics are calculated directly from the sample lengths. In addition, FracPaQ employs MLE methods to estimate optimum length distributions, with a Goodness of Fit approach. The work of Rizzo et al., (Rizzo, R.E., Healy, D. and De Siena, L., 2017. Benefits of maximum likelihood estimators for fracture attribute analysis: Implications for permeability and up-scaling. Journal of Structural Geology, 95, pp.17-31.) is not cited here, and it needs to be. As the current text gives an incorrect impression of FracPaQ functionality, I respectfully ask for clarification on these points.

Line 383: again, as above length stats estimation in FracPaQ does not use circular scanlines; we use the mean and standard deviation of the sample data and, optionally, MLE. Please correct this misleading statement.

Changed the following lines:

Before	After
43 Authors is based on circular scanlines (Mauldon,1998; Zhang and Einstein, 1998; Mauldon et al., 2001; Rohrbaugh et al., 2002; Healy et al., 2017).	43 Authors is based on circular scanlines (Mauldon,1998; Zhang and Einstein, 1998; Mauldon et al., 2001; Rohrbaugh et al., 2002).
48 Thanks to its simple implementation in the field, this technique became popular and, thanks to its computational efficiency and apparent simpleness, was also implemented in modern applications such as FracPaQ (Healy et al., 2017) to be used with the DOM approach. However, this method has an important limitation: lineament lengths are **never directly measured** and so the circular scanline method yields estimates of mean values **without** a complete characterization of the lineament length distribution and **without** any real statistical significance (e.g. variance can be estimated only under very limiting assumptions, Pahl (1981)).	48 Thanks to its simple implementation in the field, this technique is widely used however it has an important limitation: lineament lengths are never directly measured. Due to this, analysis carried out with the circular scanline method yielded estimates of mean values without a complete characterization of the lineament length distribution and without any real statistical significance.

54 Moreover, calculating the length and estimating any distribution other than the exponential, was difficult and computationally intensive (Baecher and Lanney, 1978; Baecher, 1980) and, due to limitations in early algorithms used to generate stochastic fracture networks, there was no real interest in estimating precise distribution parameters.	54 Moreover, calculating the length and estimating any distribution other than the exponential, was difficult and computationally intensive (Baecher and Lanney, 1978; Baecher, 1980) and, due to limitations in early algorithms used to generate stochastic fracture networks, there was no real interest in estimating precise distribution parameters. These limitations are less present today due to the increase of computing power and thus new tools and techniques based on Maximum Likelihood Estimation such as FracPaQ (Healy et al., 2017; Rizzo et al.,2017) are readily available, enabling researchers to apply quantitative statistical inference on dense digitalized dataset.
381 Because of this reason, non-parametrical methods such as those proposed by Mauldon et al. (2001) and implemented in software such as FracPaQ (Healy et al., 2017) are unfit since they are not linked to any model.	381 Due to this, non-parametrical methods such as those proposed by Mauldon et al. (2001) are unfit since they are not linked to any model.
385 With a parametric model this can be easily estimated by checking the length values associated to a probability chosen depending on the safety margin that is needed for the use case. Approaches such as ignoring censoring or removing censored data do provide a statistical distribution, however the censoring bias is still present and thus the results are skewed, always underestimating length	385 With a parametric model this can be easily estimated by checking the length values associated to a probability chosen depending on the safety margin that is needed for the use case. Modern alternatives that use a simple implementation of MLE such as FracPaQ (Healy et al., 2017) are a good step forward however the censoring bias is still present and thus the results can be skewed, underestimating length

Line 118: ‘avoided at all costs’ is a bit too dramatic; delete.

Changed to “avoided”

Line 123: ‘completely meaningless’ – again, too strong; with no other alternative, it can be a useful estimate, albeit limited.

119 On the other hand, circular scanlines methods offer an unbiased estimate of the mean length, however, being non-parametric, they do not yield neither the distribution type (e.g. normal, exponential, etc.) nor distribution shape parameters (e.g. standard deviation, variance, etc.). This in turn makes the estimate's use-case quite limited and not apt to possible statistical modelling applications such as stochastic DFNs.

Line 405: not sure this statement is true. Many outcrops are bounded by fractures; thus, the modern day process that has defined the boundary HAS been influenced by the geological structure and fabric of the rock mass.

We understand that the statement as is written is confusing and not necessarily true. We have rewritten this part to include a clearer explanation of independence (including a new part suggested by Laubach's review):

400 To correctly classify censoring as random, we must assume independence between the censoring and length distribution. By "independence" it is intended that the mechanisms behind the generation of a fracture length distribution is different from the mechanisms that censors such lenghts. The boundary, which represents censoring, is usually the product of secondary events that occur after fracture genesis (i.e. alteration, debris hiding part of the outcrop, vegetation, human activity, etc.). Thus, albeit it is often the case that such events are controlled by preexisting structures, the physical processes that caused censoring are not the same that generated the fracture set and thus the original length distribution. This leads to an important implicit caveat where the measured lengths must be related only to the mechanism that we are interested in modelling, for example lengths that are surely linked to tectonics and no other secondary events. Such discussion highlights that the assumption of independence is difficult to rigorously prove since the true distribution of the length of fractures it is not known (we only observe a set of complete and censored data). In some applications (Eppes et al. 2024) this assumption may not hold, and a more in-depth study may be required to prove the independence hypothesis before proceeding. Nonetheless, we believe that it can be safely assumed in geological applications when the appropriate field work and a posteriori analysis are carried out.

Line 470 – 'proper' – replace with 'better'.

corrected

Line 485 – regarding DFNs (and elsewhere in the ms); there are other approaches to modelling fractured rock volumes, for example effective methods and tensorial approximations. It would be better to mention and acknowledge these alternatives. DFNs are just one approach, among many.

We added the following lines in the introduction:

30 It is worth noting however that DFNs are not the only viable approach to model fractured rock volumes. Other methods such as tensorial approximations (Suzuki et al 1998, Brown and Bruhn 1998) based on the crack tensor measure (Oda 1989) are also present and quite used (Healy et al 2017).

Fig 5, 9, 12, 15, 17, – make the axis labels (numbers and text) bigger relative to the figure; hard to read.

Changed also following the suggestion from Weihmann's review.