The authors thank the reviewer for their comments and suggested revisions. We are aware that it is a time-consuming endeavour and grateful for the attention paid to our work. You will find a list of responses to your queries below.

Furthermore, in the uploaded revised manuscript, you will find an annotated manuscript attached, which has highlighted the areas throughout the manuscript where the revisions have been made.

- In the introduction, the authors note that the risk of damage to point sensors increases if they are located near a crack. But at the same time, it is known that with an increase in the crack, an optical fiber can also be destroyed. I recommend rephrasing the sentence.

The authors agree and, for simplicity, this statement has been retracted from the manuscript.

- in the description of the experiment it is indicated that the data obtained from distributed fiber-optic sensors were averaged by a sliding window of 10 mm in size, while another value appears in the conclusions: 200 mm. It is required to eliminate this contradiction.

Thanks for the query. Actually, it is recommended in the conclusions that the vertical strain fields obtained from the digital image correlation be processed using a moving average with a base length of *at least* 200 mm. Please note that, based on a comment from another reviewer, the conclusions section has been significantly reduced.

- the authors talk about the "general" limitations of distributed fiber-optic sensors in terms of the impossibility of finding the peaks of the cross-correlation functions of the spectra at large deformations, while operating only with the tools of optical reflectometry in the frequency domain. It is necessary to explain why the research team ignores the technology of Brillouin reflectometry or Brillouin analysis - BOTDR / BOTDA. At the same time, this technique is successfully used in SHM, and its performance is improved by data processing algorithms and artificial intelligence, which makes it possible to use the sensor in extreme conditions. This type of sensor can have high length resolution [10.1364/OL.424856] and good sensitivity [10.3390/s22072677].

The authors have provided a brief statement on this in the revised manuscript (lines 274 - 281): “The authors acknowledge that it is possible that other sensor systems may be more applicable in potentially measuring larger strain values, such as that based on Brillouin scattering [35,36], rather than the Rayleigh-based distributed sensors used here. However, to the knowledge of the authors, Brillouin sensors, which are often used in Structural Health Monitoring [37,38], generally provide lower resolutions (e.g., 10–15 cm [36] or 1.5 m [35]), which would present another limiting factor in the strain measurements for the experimental tests on the scaled wall units presented herein.

- when using the method of optical reflectometry in the frequency domain, the frequency coordinate of the peak depends not only on deformation, but also on temperature. The authors do not indicate the method by which they excluded the effect of temperature on the experiment.

Another reviewer had a similar comment/question regarding the exclusion of any effects due to the temperature. The authors have now provided the following statement within the revised manuscript, which we hope suffices this query (see lines 195 - 201): “The testing of the three U-shaped wall units was performed at the LEMSC laboratory, which has a heating, ventilation, and air-conditioning (i.e., HVAC) system that helps to regulate the temperature and humidity. Since it is unlikely that there were any significant thermal-dependent changes to the corresponding strain measurements acquired from these quasi-static tests, the following investigation assumes no any thermal effects on the fiber optic measurements.”

Another explanation for the “net-positive” reading by the DFOS, for when the section is in compression, could be due to thermal effects of the rebar from plastic deformation. The authors have now clarified this in the text (see lines 488 - 490): “Another explanation for this net-tension reading by the DFOS is due to thermal effects from plastic deformation of the rebars at these localized areas, which has not been ac-counted for in these experiments.” A comment on this is given in the conclusions (see lines 938 – 940): “Thermal effects of the DFOS from the rebar behaving inelastically could also explain the net-tension strain observed, which will be explored by the authors in future coupon tests.”

- to denoise the trace, the authors smooth the obtained data by averaging. At the same time, distributed sensor settings such as sweeping range, sampling parameters, and others can bring success at an earlier stage.

Thank you for the comment. The authors are now aware of this and will certainly consider this for some experiments planned using the DFOS system.