[R2.1] To compare the strain rate obtained with the nodes to that measured with the DAS, shouldn't we use a distance between the nodes equivalent to the gauge length? This is not clear to me and it is important to clarify this point in the article.

Following Wang et al. (2018), the average DAS-recorded strain rate between two nodes, separated by a distance 2L, is exactly given by the difference between the waveforms of the two nodes divided by 2L. This relation is exact for arbitrary L. We now also mention in lines 175-176 that this relation holds for separation distances larger than the gauge length:

"*A similar relation holds when the distance between the nodes is a multiple of the DAS gauge length (see Wang et al., 2018, their Eq. 5)*"

Minor comments:

3.2 Beamforming results of the nodal and DAS arrays

[R2.2] Line 117: Indicate is beamforming was performed by using all the sensors. An array response function could be useful to see the influence of the geometry of the array. As the number of seismometers is huge, I am wondering if you tried to analyze data recorded by sub-arrays.

We have added a mention that all the sensors in the array are used in the beamforming. Since the seismic source radius of an M4.3 earthquake is small compared to the Rayleigh diffraction limit, it can be well approximated by a point source. Moreover, the source radius is of the same order as the Fresnel zone size, which again leads to the conclusion that the source can be approximated by a point source. Hence the beampatterns obtained in this study are good approximations of the nodal array response.

We now analyse a subset of the DAS array segments in the newly added Section 3.5 (see also Fig. 13a in this section).

[R2.3] Lines 125-126: "(consistent with the ratio of vertical to horizontal amplitudes of the nodal P-waveforms)". This sentence is not clear to me. Amplitudes of vertical and horizontal components are not commented in the text.

As a quick check, we measured the ratio of the vertical to horizontal component of the P-waveform recorded by the nodal seismometers, which is indicative of the inclination of the P-wavefield. Since we performed this check only as a back-of-the-envelope verification of the inclination estimated from the beamforming results, we chose not to discuss this aspect in more detail.

[R2.4] Line 134: I don't understand what "polarity flips" mean in this context. Can you clarify?

We clarified the polarity flips as:

"*Thirdly, depending on the orientation of the fibre, S-wave polarity flips are anticipated (Fang et al., 2020). These polarity flips are due to the projection of the particle motion onto the fibre, leading to contraction in some segments and extension in others (Lindsey et al., 2017).*"

[R2.5] Line 138: It is not clear if all the fibre-optic cable was used for the beamforming analysis. The gauge length should be indicated, as well as the distance between each strain rate measurement and the total number of individual SR measurements used in the beamforming analysis.

We now mention in lines 52-54 that: "*The gauge length was taken to be 10m, which was supersampled to give a channel spacing of 1m (i.e. one strain rate measurement was made every 1m)*".

In lines 150 we now state that we perform the beamforming on "*the entire DAS array recordings (8621 channels in total)*".

3.3 Simulating DAS recordings from the nodal array

[R2.6] Line 152: one component of strain

Corrected

[R2.7] Line 166: The angle theta is considered relatively to North?

We now mention in this line that the angle is measured relative to east.

[R2.8] Line 155-171: The simulated strain rate is calculated with node pairs separated by a distance less than 80m. Is this distance equal or bigger than the gauge length used during the experiment (the GL used during the experiment is not indicated in the manuscript)? Why not showing in a figure simulated strain rate signal and measured strain rate on the same segment?

We now indicate in the manuscript that the gauge length is 10m. For (several examples of) a comparison between measured strain rates and those derived from a pair of nodal seismometers, we refer in the manuscript to Wang et al. (2018).

3.4 Selective beamforming of the DAS array

[R2.9] The beamforming analysis on the P-waveforms recorded by the DAS array should be clarified. Are you using the same analysis parameters as for the beamforming of the nodal array? In term of frequency range, time window length? It would be useful to indicate how long are the segments of fibre used for beamforming analysis and how many strain rate measurement points they include.

We now state in lines 150-151:

"*When we nonetheless continue to perform beamforming on the entire DAS array recordings (8621 channels in total), we obtain highly variable results (Fig. 7) for the same window length and frequency range as was used for the nodal array.*"

The beamforming is performed on the entire DAS array at once, and not segment-by-segment. The length of individual segments is therefore not directly relevant.

[R2.10] Line 233-234: Indicate in parentheses the segments corresponding to a direction-of-arrival between the east and the south and a direction-of-arrival from the north. The text will be easier to read if you indicate the number of the segments.

We now explicitly indicate the segment numbers with a direction east/south and those with a direction north.

[R2.11] Line 233-234 and figure 12: What is discriminating more between the 2 groups of segments, the back-azimuth or the apparent velocity?

In line 245 of the original manuscript (line 261 in the revised manuscript), we mention that "*When we exclude the two segments with an apparent source north of the array*", i.e. the discriminating feature is the back-azimuth of the source inferred for each segment.

[R2.12] Line 240: "implicitly"

Corrected.

[R2.13] Line 245: As mentioned before, indicate the number of the segments.

We added that "*four segments remain*" in this line.

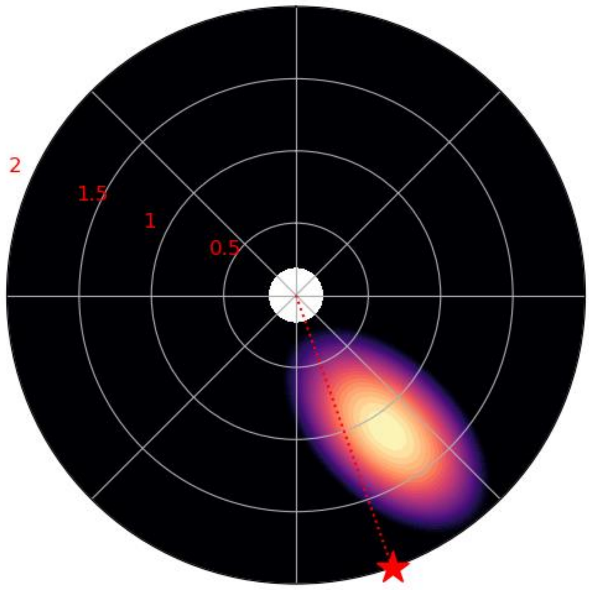
[R2.14] Line 245: When excluding segments 4 and 6, the geometry of the DAS array used for beamforming is relatively linear. This geometry probably explain the elongating shape of the PDF in figure 12d. As I mentioned before for Line 117, it would be useful to show the array response function.

The reviewer is correct that when combining multiple linear segments with a similar orientation, the intersection of their beams is less well resolved, resulting in a broader spread of beampower. Fortunately, segment 5 exhibits a slightly different orientation from segments 1-3, which alleviates this somewhat.

Considering the extent of the DAS array with respect to the extent of the seismic source and its distance from the array, the distribution of beampower in Fig. 12 is representative for the array response (see also our reply to comment R2.2).

[R2.15] Have you tried to estimate the slowness vector with sub-arrays? For example, segments 1, 2 and 3 constitute an array with a less linear geometry.

In this particular section, we aimed to provide an automated segment selection criterion based on the internal coherence of the segments (rather than manually and arbitrarily selecting segments). We have not explored automated selection criteria for combining multiple segments into (non-linear) subarrays. When we manually pick and combine segments 1, 2, and 3 into a subarray and perform the beamforming, we get a similar result as what was obtained in Fig. 12d of the manuscript, though with a much higher slowness (just over 1 s/km; see the figure included below, which shows the slowness space for the 0.5-1 Hz frequency band). This result does not contribute much to the overall conclusions of this section, and more systematic methods of creating subarrays need to be explored.



Figures:

[R2.16] Figure 8: The indication of the direction of propagation of the wavefield would help to better understand the selection of the segments in red.

The propagation direction has been added.

[R2.17] Figures of beamforming results: Apparent velocity values are difficult to read, either because they are represented in red, or because character size is too small.

We agree with the reviewer that the radial axis labels are hard to read on paper and on small screens. We have experimented with different colours and sizes, and we concluded that the current representation is the clearest. A larger font size or bold face will lead to crammed/overlapping numbers, and other colours have insufficient contrast to the chosen colourmap (or to the white background of the image). Fortunately, the vectorised PDF images can be enlarged on-screen without loss of fidelity.