Dear Editory Battachyra,

Thank you for sending us on the reviews. Reviewer A did not really provide a review – please see comments below. Reviewer B's comments are relatively easily dealt with and I have attached a changes-marked revised version below. We respond to the reviews in red below.

I look forward to hearing from you,

Michael Bostock

Reviewer A: Douglas Schmitt

This reviewer has elected not to provide a review per se but rather to supply a "Commentary". This commentary provides some background that, in particular in its later sections, could be useful for the potential reader/user of the measurements presented within the current manuscript. We as facilitators have no objections to inclusion of this "Commentary" along-side the current manuscript (Doug Schmitt is one of a very few scientists who has made measurements on anisotropic rocks similar those presented here). However, there are 2 points to note: a) Seismica does have a "Commentary" publication type and so there are likely formal procedures by which Reviewer A's submitted commentary must be dealt with, and b) the commentary does include a fair number of typos; please see the attached and revised commentary file with changes tracked.

I would suggest you contact Executive Editor Christie Rowe as to her thoughts on how to deal with the Doug Schmitt's commentary since neither it nor the manuscript are "conventional", and Christie is already familiar with the peculiar circumstances of the submission.

Reviewer B: Walter Mooney

This is a remarkable paper. It is a fitting completion of a life's work, beginning with Christensen (1966), Shear wave velocities in metamorphic rocks at pressures to 10 kilobars, Journal of Geophysical Research, 71, 3549-3556.

This manuscript is quite a remarkable piece of work, with nearly 500 lines of text and five Tables that amount to more than 20 pages of measurements. This is the product of years of laboratory measurements. The bibliography is useful as well.

I have reviewed all sections of the manuscript carefully. There are few suggested changes.

Thank you for your constructive criticisms of Christensen's work.

My main suggestion is to define a few key concepts, as suggested below ("S-wave singularities" and several other terms.)

Kudos to Nik Christensen's colleagues, Michael Bostock, Simon Peacock and Matthew Tarling for pulling this manuscript together.

Final note: There is no Conclusion section. Therefore, I searched Nik's published papers for a direct quotation, hoping to find a paragraph that extolled the value of such measurements. I failed to find anything written by Nik that is suitable, therefore I recommend publication as it stands at present.

Thank you for your effort.

I suggest: "Acknowledgements: Karen Christensen was the author's life partner during his entire scientific career."

We have added an Acknowledgements section and entered the reviewer's suggestion as the first item.

Line	**Comment**
44, 45, 49, 55.	What is "an off axis S-wave singularity"?

We now define the general term "singularity" where it is first introduced, in the Introduction section. This helps to clarify the reviewer's concerns about the term "crossover"; see below.

62-69	All "Key points" are complete sentences and can end with a period.

Thank you, we have added periods to the "Key Points"

167	Separate citations by a semi-colon (;).

Done

198	same as line 167

Done

282	0° (not 0)

Done

299	"are shown"

Amended reviewer's suggestion to what we feel is the slightly more appropriate "as shown".

307 what are "S-wave velocity crossovers"? Why significant?

We have amended this phrasing to "cross-over singularities" in various places through the manuscript which makes the context clear now that "singularity" has been defined (see reviewer's point above concerning definition of singularity) and that crossover angle refers to the angle at which this singularity occurs..

Figure 4 Define "quasi P-wave" and "quasi S-wave". These of course refer to seismic phases that propagate in an anisotropic medium. This can be concisely stated.

We have included a definition of "quasi" as it pertains to P and S waves at its first occurrence in section 3

364 Move period in "Fig 5." to "Fig. 5"

Done

376 36.4°

Done

400 S-wave crossovers need an explanation. This is a common term for anisotropy, but a concise definition would be useful.

See comment above regarding crossover singularities

404 "Figure w"?

Corrected to "Fig. 5"

423 "originates"? perhaps "occurs" is better?

Done

450 "dunite 99". You might say "dunite MRX99 (Table 1)"

Done

467 (MRX115, Table 1)

Done

472 slate MRX108, phyllite MRX109 and dunite 123 (all Table 1)…

Done

487 for the two lithologies

Done

Signed review: Walter D. Mooney

Recommendation: Accept Submission