General aspects

RC1: The introduction chapter is in some parts is patchy and not straightforward. In several places we modified the structure of the introduction in order to improve the flow according to the comments.

RC1: the paragraph from line 55 to 59 would fit much better before paragraph starting line 48. We moved these lines in the introduction.

RC1: From my personal point of view, the appendix A (B) would fit well within the introduction or chapter 2. We agree that the appendix A and B could be part of the main text. However, although those calculations are important in order to understand the rational beyond stress calculations, we think that they are better in appendix because they are mainly reviews of calculation previously described and this make the manuscript more focused.

RC1: SV, SH and Sh are well known. However, the relative position to each other could be mentioned in the introduction. We added a sentence in section 2.1 to specify Sh and SH.

RC1: The reader is often mislead that one of the model parts (e.g. uniaxial, strain driven or critical) are separate models. A small sketch showing the relative position of model parts/boundary conditions would help. I am not sure we understand the comment and further details would be great. There is already a Table and a figure giving details on the modelling strategies.

Minor issues

RC1: line 25: both cited papers from Reiter el. al. and Reiter and Heidbach (2014) are not overview paper on crustal stresses in general, these papers are focused on crustal stresses in Alberta and Canada. May other paper would fit much better as a general introduction. We added two references.

RC1: lines 108-120: introduction? The lines 116-120 have been moved in the introduction.

RC1: lines 187-189: introduction? We think that those line are unnecessary details for the introduction and fit better in this section.

RC1: line 198: ‘horizontal stress profile’? We removed “horizontal”

RC1: line 220: ‘depth-dependent Poisson’s Ratio’? or lithology dependent Poisson’s Ratio? We replaced depth-dependent by lithology dependent.

RC1: line 245: The max. (regional) horizontal stress is ‘negligible’. That could be an assumption, but the maximum horizontal stress as well the correction are introduced and mentioned by several equations in chapter 2. I think that could be mentioned in the introduction. Several assumptions are made and described in the paper. However, we think that specifying this one in particular in the introduction will be unnecessary details for the introduction.
These lines has been moved in the discussion

These lines has been moved in the introduction

We added a sentence to explain E

We modified this part to make clear what is A and B

We modified the reference

We modified the reference.

We modified the table.

We added colours in the figure.

We added a sentence in the caption to specify that Muskwa, Otter Park and Evie member are together the Horn River Formation. We replaced injection levels by location of stress measurements.

We modified the figures, the captions and added colors.