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Interactive comment on "3-D geomechanical modelling of a gas reservoir in the North German Basin: workflow for model building and calibration" *by* K. Fischer and A. Henk

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This is a good article and deserves to be published in this journal. The majority of the paper is concerned with the method, which I think is necessary. I would therefore suggest the title was changed to 'A workflow for building and calibrating 3-D geomechanical models of gas reservoirs, as shown for an example from the North German Basin'.
Of course this example is only possible because this area has been heavily drilled and a lot of calibration data is available. It would be interesting if this method was used in addition on a not-so-well-known area, and a range of Young's Moduli and Poisson's

ratios and/or a range of far-field stress magnitudes were applied. Then the relative effects of these unknown quantities could be investigated and classified as to their effects on the results. Maybe in a future paper?

Specific Comments

1. recent, as in "recent stress-field" is too imprecise - please use 'present-day stress-field' throughout the text.

2. p. 777 l.21 'Only distant and hypothetical faults are left out'. This sentence is too vague in its present form. Whether a fault is seismically visible or otherwise inferred should explained here. What are criteria for putting a fault in a model? Displacement? Size?

English Corrections

p.769, l.4 delete 'respectively'
p.770, l.9 serves as a boundary condition...
p.771, l.9 had to be found. -> are required.
p.772, l.13 delete 'becomes'
p.772, l.18 line is not complete. than the surrounding ? area?
p.772, l.23 demand, by definition, a surface...
p.773, l.21 The FE method not only allows...
p.775, l.1 analyses -> analysis
p.775, l.2 All these measurements...
p.775, l.13 is increasing... -> increases ...

p.779, l.29 Most of the model predictions, as well as the borehole observations, follow the the regional...
p.789, l.3 between faults do pronounced orientation changes occur.
p.783, Fig. 1 caption delete ‘After calibration the validated .... undrilled parts of the reservoir.’

Interactive comment on Solid Earth Discuss., 5, 767, 2013.