

## Simultaneous joint migration inversion as a high-resolution time-lapse imaging method for reservoir monitoring

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# Propositions

accompanying the dissertation

## **SIMULTANEOUS JOINT MIGRATION INVERSION AS A HIGH-RESOLUTION TIME-LAPSE IMAGING METHOD FOR RESERVOIR MONITORING**

by

**Shan Qu**

1. An integral approach to acoustic wavefield modeling, using building blocks like reflection and propagation, instead of using a differential approach, makes the modeling process more controllable and flexible. (this thesis)
2. Current time-lapse seismic acquisition practice is to repeat densely sampled surveys exactly during monitoring. However, this should not be required — and even not desired — if an appropriate imaging method is used. (this thesis)
3. (Semi-)continuous time-lapse monitoring allows the calendar-time axis as an extra dimension for regularization. (this thesis)
4. Humans cannot survive situations requiring self-control for too long, since self-control is a limited source.
5. People should be allowed to have weaknesses, fears and negative emotions.
6. The historical differences of different continents, in a long term, have nothing to do with biological differences between their people, but originate ultimately from differences in their "real estate" — in particular, their environments, axes and wild plant/animal species that allow domestication. (Jared Diamond)
7. The life trajectory differences of different humans, statistically, have nothing to do with their biological differences, but originate ultimately from differences in their "real estate" — in particular, their home country, family's assert, status, responsibility. Only few individuals will be able to significantly deviate from their predicted life trajectories, either positively or negatively.
8. China has to explore its own version of democracy.
9. Citizens should respect the imperfect laws; researchers should respect the imperfect peer-review; team-players should respect the imperfect rules. Of course, professionals should never stop improving laws, peer-review and rules. (Inspired by Socrates)

These propositions are regarded as opposable and defensible, and have been approved as such by the promoters: Dr. ir. D.J. Verschuur and Prof. dr. ir. N. de Jong.