

*Escobar, I., Williamson, P. & Recordon, M. 2006.*  
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#### ABSTRACT

A Petro-Elastic model is often tuned to a given dataset using a trial-and-error fitting approach. A new approach is presented, where this 'manual inversion' is re-formulated as a global and almost automatic optimization problem. The parameterization in terms of saturations, pressure, and temperature has been simplified and embedded as an objective function within a simulated annealing algorithm. The implementation is object-oriented, allowing for easy modification, and improvement, as well as an easy selection of inversion parameters. It has been successfully tested on well data from West Africa and the North Sea. In both cases, parameters controlling the pressure sensitivity (frame compressibility) of sand and shale were inverted. The global optimization also provided valuable information regarding uncertainties on the model predictions and eventually on the data itself.