Wavefield Extrapolation for Prestack Time Migration with RMS Velocity
Part II – Data Examples

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The standard time processing product in strucurally complex geological settings is prestack time migration.

The most common implementation of prestack time migration is based on Kirchhoff summation algorithms, which proved over the years to be a very flexible and reliable imaging approach.

However, more often than not, a combination of rugged topography, sharp velocity-thickness variations in the near-surface model, abrupt changes in the subsurface velocity in the lateral and vertical directions creates an illumination heterogeneity. This in turn causes Kirchhoff summation prestack time migration final images to suffer and therefore prestack depth migration is needed.

In order to address the challenge of uneven illumination and as an alternative to Kirchhoff summation prestack time migration a Wave Equation Summation prestack time migration algorithm was developed and presented in part one of this paper.

Data examples from international as well as domestic structural complex geological settings are presented in part two of the paper, comparing Kirchhoff summation prestack time migration to Wave Equation Summation prestack time migration final images.