

COMMON-REFLECTION-POINT (CRP) TIME MIGRATION

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Since the early days of seismic processing, time migration has proven to be a valuable tool for a number of imaging purposes. Main motivations for its widespread use include robustness with respect to velocity errors, as well as fast turnovers and low computation costs. In areas of complex geology, in which it has well-known limitations, time migration can still be value by providing first images and also attributes, which can be of much help in further, comprehensive depth migration. Time migration is a very close process to the zero-offset common-reflection-surface (ZO CRS) stacking method, in fact, Kirchhoff time migration operators can be readily formulated in terms of CRS parameters. In the nineties, several studies have shown appealing advantages in the use of common-reflection-point (CRP) traveltimes to replace conventional common-midpoint (CMP) traveltimes for a number of stacking and migration purposes. In this paper, we follow that trend and introduce a Kirchhoff-type prestack time migration algorithm, referred to as CRP time migration. The algorithm is based on a CRP operator together with optimal apertures, both computed with the help of CRS parameters.