

石油地球场理勘探

OIL GEOPHYSICAL PROSPECTING

首页

石油地球物理勘探 » 2014, Vol. 49 » Issue (3):474 DOI:

处理技术

最新目录 | 下期目录 | 过刊浏览 | 高级检索

<< Previous Articles | Next Articles >>

基于局部相似度的叠前非稳态相位校正方法

刘玉金, 李振春, 周卿

中国石油大学(华东)地球科学与技术学院, 山东青岛 266555

Pre-stack non-stationarity phase correction based on local similarity

Liu Yujin, Li Zhenchun, Zhouqin

School of Geoscience, China University of Petroleum (East China), Qingdao, Shandong 266555, China

摘要

参考文献

相关文章

Download: PDF (5994KB) HTML 1KB Export: BibTeX or EndNote (RIS)

Supporting Info

摘要 针对叠前常相位校正方法没有考虑子波相位随时间和空间变化以及精度有限的问题,在整形最小二乘反演的框架下,提出了一种基于局部相似度的叠前非稳态相位校正方法。通过计算相位旋转后的地震道与优化后的模型道之间的局部相似度,估算各地震道与模型道之间的局部相位差;再进行相位校正,即可得到相位一致的叠前道集。理论模型和实际资料处理结果表明,本文方法可以有效校正叠前道集中相位不一致现象,改善叠加效果,提高速度分析的精度,具有较高的实用价值。

关键词: 叠前相位校正 局部相似度 非稳态 整形最小二乘反演

Abstract: To take the non-stationarity (time- and space- varying property) of phase attribute in prestack gathers into account, we propose a new prestack phase correction method based on local similarity in the framework of least-squares inversion with shaping regularization. The proposed method calculates firstly local similarity between the phase-rotated trace and the optimal reference trace, then estimates the phase difference between each trace and the reference trace with this local similarity. Finally the aligned prestack gathers are obtained after phase correction. Experimental results of synthetic and real data show that our proposed method can correct the phase inconsistency between traces in prestack gathers and realize coherent stack so as to improve the stack quality. local similarity between the phase-rotated trace and the optimal reference trace, then estimates the phase difference between each trace and the reference trace with this local similarity. Finally the aligned prestack gathers are obtained after phase correction. Experimental results of synthetic and real data show that our proposed method can correct the phase inconsistency between traces in prestack gathers and realize coherent stack so as to improve the stack quality.

Keywords: prestack phase correction local similarity non-stationary shaping regularized least squares inversion

Received 2012-07-24;

Fund:本项目受国家自然科学基金(41374122)、国家科技重大专项课题(2011ZX05006-002)和中国石油大学(华东)优秀博士论文培育计划联合资助。

Corresponding Authors: 刘玉金, einsteinliu@126.com Email: einsteinliu@126.com

About author: 刘玉金 博士研究生,1986年生;2008年毕业于中国石油大学(华东)地球物理学专业,获理学学士学位,同年保送本校攻读固体地球物理学硕士学位,于2010年获直攻博士资格进入本校地质资源与地质工程专业攻读博士学位,2012~2013年在美国莱斯大学访问交流,一直从事地震数据预处理及反演成像方面的研究工作。

引用本文:

刘玉金, 李振春, 周卿.基于局部相似度的叠前非稳态相位校正方法[J] 石油地球物理勘探, 2014, V49(3): 474

Liu Yujin, Li Zhenchun, Zhouqin.Pre-stack non-stationarity phase correction based on local similarity[J] OGP, 2014,V49(3):474

Service

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ Email Alert
- ▶ RSS

作者相关文章

- ▶ 刘玉金
- ▶ 李振春
- ▶周卿

Copyright 2010 by 石油地球物理勘探