

引用本文(Citation):

杨亭, 傅容珊, 黄金水. 利用Moho面起伏及地表地形数据反演岩石圈有效弹性厚度的莫霍地形导纳法(MDDF). 地球物理学报, 2012,55(11): 3671-3680,doi: 10.6038/j.issn.0001-5733.2012.11.014

YANG Ting, FU Rong-Shan, HUANG Jin-Shui. On the inversion of effective elastic thickness of the lithosphere with Moho relief and topography data. Chinese J. Geophys. (in Chinese), 2012, 55(11): 3671-3680, doi: 10.6038/j.issn.0001-5733.2012.11.014

利用Moho面起伏及地表地形数据反演岩石圈有效弹性厚度的莫霍地形导纳法(MDDF)

杨亭, 傅容珊, 黄金水*

蒙城地球物理国家野外科学观测研究站, 中国科学技术大学地球和空间科学学院, 合肥 230026

On the inversion of effective elastic thickness of the lithosphere with Moho relief and topography data

YANG Ting, FU Rong-Shan, HUANG Jin-Shui*

Mengcheng National Geophysical Observatory, School of Earth and Space Science, University of Science and Technology of China, Hefei 230026, China

摘要

参考文献

相关文章

Download: [PDF](#) (2554 KB) [HTML](#) (0 KB) Export: [BibTeX](#) or [EndNote](#) (RIS) [Supporting Info](#)

摘要 区域岩石圈有效弹性厚度 T_e 的确定对认识其力学性质及演化等动力学问题具有重要意义. 长期以来, 大陆地区有效弹性厚度的确定一直存在着争议. 尽管Pérez-Gussinyé等2004年的研究消除了不同方法(自由空气导纳法和布格相关法)之间的分歧, 但其确定有效弹性厚度的误差仍然非常大. 本文提出了利用Moho面起伏及地表地形反演岩石圈有效弹性厚度的Moho地形导纳法(MDDF), 并利用合成的地表地形和Moho面起伏模型验证了该方法的可行性. 结果表明, 与传统的重力地形导纳法相比, 使用Moho地形导纳法(MDDF)反演岩石圈有效弹性厚度, 能较好地提高反演精度.

关键词 有效弹性厚度, 岩石圈, Moho面起伏, 反演精度

Abstract: Effective elastic thickness T_e has great significance on understanding the mechanical properties and evolution of the lithosphere. Over the years, there had been much controversy on determining the effective elastic thickness of lithosphere in continent. Although the work of Pérez-Gussinyé et al in 2004 eliminated the discrepancy in determining the effective elastic thickness using different methods (Free-air admittance and Bouguer coherence method), the standard deviation in inverting T_e is still very large. In this article, we proposed a new approach to inverse effective elastic thickness. In this new method, Moho relief and topography data are supposed to be given and thus we call it Moho-topography admittance method (MDDF). Then we verified the feasibility of this method using synthetic topography and Moho relief data. Our results indicate that using the Moho-topography admittance method can improve the inversion accuracy of T_e greatly compared with the conventional Free-air topography admittance method.

Keywords Effective elastic thickness, Lithosphere, Moho relief, Inversion accuracy

Received 2011-04-06;

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

- [杨亭](#)
- [傅容珊](#)
- [黄金水](#)