

地球物理学报(月刊)

(DIQIU WULI XUEBAO)

2021年9月 第64卷 第9期



目 次

综述

- 2995 半航空电磁探测方法技术创新思考
..... 林君, 薛国强, 李貅

空间物理学·大地测量学

- 3005 基于卫星观测的上游等离子体 β 与磁层顶厚度、速度等特征参数关系的统计研究
..... 李宏硕, 吕建永, 王明, 袁换只, 周悦

- 3021 综合半参数核估计和自回归补偿的全球电离层总电子含量预报模型 邱封钦, 潘雄,
罗小敏, 赖祖龙, 蒋可, 王广兴

- 3030 中国区域 GPS 单频点定位在不同类型磁暴主相期间定位性能分析 全林, 薛军琛,
胡小工, 李泠, 刘钝, 王东亚

- 3048 GRACE/GRACE-FO 空窗期的陆地水储量变化数据间断补偿:以全球典型流域为例
..... 徐鹏飞, 蒋涛, 章传银, 芮明胜, 刘宇

- 3068 利用 GRACE 数据联合新型尺度因子校正法提高陆地水储量变化准确性
..... 杨帅, 郑伟, 尹文杰, 刘杰

地震学·地球动力学

- 3083 2021 年 5 月 21 日云南漾濞 $M_{\text{s}}6.4$ 地震震区地壳结构特征与孕震背景 李大虎,
丁志峰, 吴萍萍, 刘韶, 邓菲, 张旭, 赵航

- 3101 2021 年 5 月 21 日云南漾濞 $M_{\text{s}}6.4$ 地震:一次破裂在隐伏断层上的浅源走滑事件
..... 杨九元, 温扬茂, 许才军

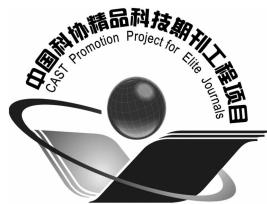
- 3111 2021 年 5 月 21 日云南漾濞 $M_{\text{s}}6.4$ 地震序列发震构造 段梦乔, 赵翠萍, 周连庆,
赵策, 左可桢

- 3126 基于数据驱动的时间序列 b 值计算新方法 (TbDD):以 2021 年云南漾濞 $M_{\text{s}}6.4$ 地震序列为
例 姜丛, 蒋长胜, 尹凤玲, 张延保, 毕金孟, 龙锋, 司政亚, 尹欣欣
- 3135 2021 年青海玛多 $M_{\text{s}}7.4$ 地震的重力挠曲均衡背景与震前重力变化 胡敏章,
郝洪涛, 韩宇飞, 赵云峰, 刘金钊, 郑兵, 张新林, 张毅, 李忠亚, 王嘉沛, 汪健, 尹鹏, 吴云龙, 韦进, 吴桂桔
- 3150 华南大陆东部地壳物质组成的地震学研究 檀玉娟, 段永红, 林吉焱, 李玮, 王高春, 李学民, 王国法, 邹长桥, 赵延娜, 周铭
- 3164 鄱庐断裂带中南段地壳结构分段特征 何奕成, 范小平, 赵启光, 霍祝青, 杨从杰, 郑雷明, 钱浩, 郑拓
- 3179 地球物理综合观测揭示秦岭—桐柏一大别复合造山带地壳及上地幔结构 刘巍, 郭震, 陈永顺, 张安琪
- 3194 青藏高原东北缘地壳及上地幔顶部速度结构研究 夏思茹, 石磊, 李永华, 郭良辉
- 3207 云南小江断裂带北段动态触发现象研究 杨晶琼, 李月芯, 远乃丹, 周仕勇, 杨宏峰, 杨周胜, 姚远
- 3220 雅鲁藏布江桑日—墨脱段岩石圈均衡研究以及虚拟水库诱发地震危险性分析 郭凌冬, 付广裕, 余雅文, 王振宇, 杨君妍
- 3232 多源布格重力异常数据贝叶斯融合算法及其在川滇地区的应用 李红蕾, 陈石, 庄建仓, 张贝, 卢红艳

应用地球物理学

- 3246 高铁地震面波相速度频散曲线提取 温景充, 石永祥, 宁杰远

- 3257 弹性波传播中由微结构相互作用导致的尺度效应分析 王之洋, 李幼铭, 白文磊
- 3270 一种基于逆时偏移的高效照明补偿成像方法 周阳, 曹俊兴, 王兴建, 胡江涛, 王华忠, 刘文卿
- 3283 VTI 介质转换波动态聚焦束偏移成像方法研究 刘强, 李振春, 张凯, 张敏, 肖建恩, 徐学成
- 3295 基于 Marchenko 理论一步法压制层间多次波 孙红日, 王维红, 石颖, 徐嘉亮
- 3304 基于机器学习的时间反转散射体检测方法 韩令贺, 狄帮让, 胡自多, 刘威, 王国庆, 徐中华
- 3316 考虑水层鸣震的海底多分量数据转换波走时反演方法 刘学义, 程玖兵, 王腾飞
- 3333 海斗深渊区十字放炮与 POBS 精确位置校正 ... 李子正, 丘学林, 张佳政, 张浩宇, 陈翰
- 3344 黔东页岩复电阻率各向异性及其与页岩气储层参数关系研究 成联正, 王贊, 张川
- 3358 一种改进的重力梯度全张量数据的边界识别方法 杜威, 吴贺宇, 陈祥忠, 刘俊成, 张阳阳, 惠梦琳
- 3368 基于航磁矢量数据的磁源总磁化方向估算 谢汝宽, 熊盛青, 段树岭, 王金龙, 骆遥, 王平, 段然, 刘浩军, 范正国
- 3379 瞬变电磁扩散场到虚拟波场的精细积分变换算法 鲁凯亮, 李貅, 戚志鹏, 樊亚楠, 周建美, 李文翰, 李贺, 张明晶, 王扬州
- 3391 含环状天线槽正交方位随钻电磁波测井仪器三维有限体积法数值模拟 于蕾, 王浩森, 汪宏年, 杨守文, 殷长春
- 3410 基于卷积神经网络和 MPGA-LM 算法的阵列侧向测井快速反演方法 吴易智, 范宜仁, 巫振观, 邓少贵, 张盼, 陈诗宇, 尹中旭



CHINESE JOURNAL OF GEOPHYSICS

(Monthly) Vol. 64 No. 9 Sep., 2021

Contents

Review

- 2995 Technological innovation of semi-airborne electromagnetic detection method ... LIN Jun, XUE GuoQiang, LI Xiu

Space Physics • Geodesy

- 3005 A statistical study of the relationship between the upstream plasma β and characteristic parameters such as magnetopause thickness and velocity based on satellite observations ... LI HongShuo, LÜ JianYong, WANG Ming, YUAN HuanZhi, ZHOU Yue
- 3021 Global ionospheric TEC prediction model integrated with semiparametric kernel estimation and autoregressive compensation ... QIU FengQin, PAN Xiong, LUO XiaoMin, LAI ZuLong, JIANG Ke, WANG GuangXing

- 3030 Performance of GPS single frequency standard point positioning in China during the main phase of different classified geomagnetic storms ... QUAN Lin, XUE JunChen, HU XiaoGong, LI Ling, LIU Dun, WANG DongYa

- 3048 Data filling of terrestrial water storage anomaly during the gap period of GRACE/GRACE-FO: a case study of global typical basins ... XU PengFei, JIANG Tao, ZHANG ChuanYin, RUI MingSheng, LIU Yu

- 3068 Improve the accuracy of GRACE terrestrial water storage changes using GRACE data combined with a new scale factor correction method ... YANG Shuai, ZHENG Wei, YIN WenJie, LIU Jie

Seismology • Geodynamics

- 3083 The characteristics of crustal structure and seismogenic background of Yangbi $M_s 6.4$ earthquake on May 21,

- 2021 in Yunnan Province, China LI DaHu,

DING ZhiFeng, WU PingPing, LIU Shao, DENG Fei, ZHANG Xu, ZHAO Hang

- 3101 The 21 May 2021 $M_s 6.4$ Yangbi (Yunnan) earthquake: A shallow strike-slip event rupturing in a blind fault ... YANG JiuYuan, WEN YangMao, XU CaiJun
- 3111 Seismogenic structure of the 21 May 2021 $M_s 6.4$ Yunnan Yangbi earthquake sequence DUAN MengQiao, ZHAO CuiPing, ZHOU LianQing, ZHAO Ce, ZUO KeZhen
- 3126 A new method for calculating b -value of time sequence based on data-driven (TbDD): A case study of the 2021 Yangbi $M_s 6.4$ earthquake sequence in Yunnan JIANG Cong, JIANG ChangSheng, YIN FengLing, ZHANG YanBao, BI JinMeng, LONG Feng, SI ZhengYa, YIN XinXin

- 3135 Gravity flexural isostasy background of the 2021 Madoi (Qinghai) $M_s 7.4$ earthquake and gravity change before the earthquake HU MinZhang, HAO HongTao, HAN YuFei, ZHAO YunFeng, LIU JinZhao, ZHENG Bing, ZHANG XinLin, ZHANG Yi, LI ZhongYa, WANG JiaPei, WANG Jian, YIN Peng, WU YunLong, WEI Jin, WU GuiJu

- 3150 Crustal composition of the eastern South China Block based on the seismological study TAN YuJuan, DUAN YongHong, LIN JiYan, LI Wei, WANG GaoChun, LI XueMin, WANG GuoFa, ZOU ChangQiao, ZHAO YanNa, ZHOU Ming

- 3164 Segmentation of crustal structure beneath the middle-south segment of Tan-Lu Fault Zone HE YiCheng, FAN XiaoPing, ZHAO QiGuang, HUO ZhuQing, YANG CongJie, ZHENG LeiMing, QIAN Hao, ZHENG Tuo

- 3179 The crustal and uppermost mantle structure of the Qinling-

Tongbai-Dabie orogenic belt from integrated geophysical observations … LIU Wei, GUO Zhen, CHEN YongShun, ZHANG AnQi

3194 Velocity structures of the crust and uppermost mantle beneath the northeastern margin of Tibetan plateau revealed by double-difference tomography …… XIA SiRu, SHI Lei, LI YongHua, GUO LiangHui

3207 Dynamic earthquake triggering in the north of Xiaojiang fault zone, Yunnan …… YANG JingQiong, LI YueXin, YUN NaiDan, ZHOU ShiYong, YANG HongFeng, YANG ZhouSheng, YAO Yuan

3220 Lithosphericisostasy and risk of reservoir-induced earthquakes along the Yarlung Zangbo River between Sangri and Mêdog … GUO LingDong, FU GuangYu, SHE YaWen, WANG ZhenYu, YANG JunYan

3232 A Bayesian data fusion algorithm for multi-source Bouguer gravity anomalies and its application in the Sichuan-Yunnan region … LI HongLei, CHEN Shi, ZHUANG JianCang, ZHANG Bei, LU HongYan

3246 Measurement of high-speed rail surface-wave phase-velocity dispersion …… WEN JingChong, SHI YongXiang, NING JieYuan

3257 Scale effect of microstructure interaction in elastic wave propagation …… WANG ZhiYang, LI YouMing, BAI WenLei

3270 An efficient illumination compensation imaging method based on reverse-time migration …… ZHOU Yang, CAO JunXing, WANG XingJian, HU JiangTao, WANG HuaZhong, LIU WenQing

3283 Dynamical focused-beam migration of converted waves in VTI media …… LIU Qiang, LI ZhenChun, ZHANG Kai, ZHANG Min, XIAO JianEn, XU XueCheng

3295 Suppression of internal multiples based on Marchenko theory by one step …… SUN HongRi, WANG WeiHong, SHI Ying, XU JiaLiang

3304 Time-reversal scatterer detection method using machine learning …… HAN LingHe, DI BangRang, HU ZiDuo, LIU Wei, WANG GuoQing, XU ZhongHua

3316 Travel-time inversion for converted waves of ocean-bottom multi-component seismograms considering water-layer reverberations …… LIU XueYi, CHENG JiuBing, WANG TengFei

3333 Cross-lineairgun shooting and accurate relocation of POBS in the “Hadal Deep” …… LI ZiZheng, QIU XueLin, ZHANG JiaZheng, ZHANG HaoYu, CHEN Han

3344 Anisotropy of complex resistivity of the shale in eastern Guizhou province and its correlations to reservoir parameters of shale gas …… CHENG LianZheng, WANG Yun, ZHANG Chuan

3358 An improved edge detection method for full gravity gradient tensor data …… DU Wei, WU HeYu, CHEN XiangZhong, LIU JunCheng, ZHANG YangYang, HUI MengLin

3368 Estimating total magnetization direction of magnetic sources by using airborne vector magnetic data …… XIE RuKuan, XIONG ShengQing, DUAN ShuLing, WANG JinLong, LUO Yao, WANG Ping, DUAN Ran, LIU HaoJun, FAN ZhengGuo

3379 A precise integration transform algorithm for transformation from the transient electromagnetic diffusion field into the pseudo wave field …… LU KaiLiang, LI Xiu, QI ZhiPeng, FAN YaNan, ZHOU JianMei, LI WenHan, LI He, ZHANG MingJing, WANG YangZhou

3391 Numerical simulation of the LWD orthogonal azimuth electromagnetic tool with annular antenna recesses by the 3D finite volume method …… YU Lei, WANG HaoSen, WANG HongNian, YANG ShouWen, YIN ChangChun

3410 A fast inversion method for array laterolog based on convolutional neural network and hybrid MPGALM algorithm … WU YiZhi, FAN YiRen, WU ZhenGuan, DENG ShaoGui, ZHANG Pan, CHEN ShiYu, YIN ZhongXu



3246 Measurement of high-speed rail surface-wave phase-velocity dispersion …… WEN JingChong, SHI YongXiang, NING JieYuan

3257 Scale effect of microstructure interaction in elastic wave propagation …… WANG ZhiYang, LI YouMing, BAI WenLei

3270 An efficient illumination compensation imaging method based on reverse-time migration …… ZHOU Yang, CAO JunXing, WANG XingJian, HU JiangTao, WANG HuaZhong, LIU WenQing

3283 Dynamical focused-beam migration of converted waves in VTI media …… LIU Qiang, LI ZhenChun, ZHANG Kai, ZHANG Min, XIAO JianEn, XU XueCheng

3295 Suppression of internal multiples based on Marchenko theory by one step …… SUN HongRi, WANG WeiHong, SHI Ying, XU JiaLiang