

中国医学物理学杂志

CHINESE JOURNAL OF MEDICAL PHYSICS

月刊 1984年创刊 2023年8月25日第40卷第8期(总第241期)



主 管
南方医科大学

主 办
南方医科大学
中国医学物理学会

编 辑
《中国医学物理学杂志》编委会

主 编
胡逸民

编辑部主任
黄开颜

出 版
《中国医学物理学杂志》编辑部

通讯地址
广州市同和南方医科大学
生物医学工程学院
电话:020-61648280
传真:020-61360581
邮编:510515
网址:www.cjomp.com
E-mail:YXWL@263.net.cn
微信号:cjomp001

印 刷
广州市艺彩印务有限公司

国内订阅
全国各地邮政局
邮发代号:46-259

国外订阅
中国出版对外贸易总公司
(北京782信箱)

国外发行代号
DK44009

邮 购
《中国医学物理学杂志》编辑部

定 价
每册15.00元;全年180.00元

中国标准连续出版物号
ISSN 1005-202X
CN 44-1351/R

目 次

医学放射物理

- IMRT QA 中基于后融合卷积神经网络的MLC误差分类预测 阎冰,余泉,王帅,吴爱林,张红雁,吴爱东(925)
基于RGSC系统的左乳腺癌深吸气屏气放疗的应用及评估 魏夏平,苏洁洪,李琳,安世霞,董彦鑫,黄小伟,刘叶明,黄明超(933)
应用热释光剂量计测量乳腺癌根治术后放疗中不同定位方式对体表吸收剂量影响的体模研究 王钦,邓敏敏,郁艳军,倪文婕,张富利(938)

医学影像物理

- 基于DeepLab V3+深度神经网络的结直肠息肉内镜图像分割 朱世祺,徐昶,周鑫,刘璐,林嘉希,殷民月,刘晓琳,许春芳,朱锦舟(944)
基于低辐射剂量全脑CT灌注评估急性缺血性脑卒中侧支循环的研究 王雁南,周俊林,那飞扬,刘显旺,刘建莉(950)
基于上下文特征感知和双频上采样的食管早癌图像分割 孟延宗,李小霞,周颖玥,文黎明,秦佳敏,刘爽利(957)
基于LabVIEW的眼结膜微血管采集管理系统及应用 黄远聪(964)
基于GAN-DAUnet的肝脏CT图像肿瘤分割算法 周金治,胡震,郭莉莉,龚莉,张翁荣(971)
基于改进Faster RCNN的舌部多纹理检测 冀常鹏,杨梦晗,代巍(977)
超声、磁共振及染色体基因检测联合诊断胎儿颅脑异常的临床价值 张国梁,王利顺,李伟伟,华天书,王启臣,赵瑶瑶(985)
基于深度学习的超声多模态乳腺肿块良恶性分类 王怡伟,李晓兵,聂生东,姜立新,万财凤,蒋卓韵,贾守强(988)
基于Swin Transformer的疟疾细胞图像识别研究 贺鹏飞,马建飞,李成林,张桐敬,梁大伟(996)

医学信号处理与医学仪器

- 基于可穿戴设备的姿势识别方法研究 吴秋雯,廖薇(1002)
基于心电长时RR间期序列的心房颤动检测 方东申,叶琪瑶,石少波,刘涛,李立(1009)

基于多板协同的多通道内窥镜图像处理系统陈传阳,张金刚,刘铁根(1016)

医学生物物理

血液循环驱动泵联合治疗对脊柱结核术后患者深静脉血栓的预防效果及预后影响
.....林洁,乌筱莹,丁丽麒(1022)

生物力学与材料

腰椎间盘退行性变及不同载荷影响的生物力学研究进展
.....赵希云,温萌,高国栋,权祯,王志鹏,张宏伟,秦大平,张晓刚(1026)

医学生物信息

基于Null Importance 与 GS-LGBM 的糖尿病视网膜病变因素分析与风险预测曹佳悦,罗冬梅(1033)
基于无创血压构建 MIMIC-III 波形数据库匹配子集陈智恒,尹存芳,罗俊卿(1039)

医学人工智能

人工智能在急性缺血性脑卒中早期 ASPECTS 评估中的研究进展方婷,杨一风,贾守强,聂生东(1045)
基于深度卷积神经网络的上消化道内镜解剖分类模型构建
.....许郭婷,吴爱荣,林嘉希,高欣,周鑫,顾慧媛,许春芳,朱锦舟(1051)

责任编辑:黄开颜

责任校对:薛泽玲 谭斯允 陈丽霞

英语校对:谭斯允

编 务:廖艳玲

期刊基本参数:CN44-1351/R * 1984 * M * A4 * 136 * zh * P * ¥ 15.0 * 800 * 21 * 2023-08



CHINESE JOURNAL OF MEDICAL PHYSICS (Monthly)

Established in 1984

August 25, 2023, Vol.40, No.8 Total No. 241

Responsible Institution

Southern Medical University

Sponsored by

Southern Medical University
Chinese Society of Medical Physics

Edited by

Editorial Board of Chinese
Journal of Medical Physics

Editor-in-Chief

HU Yimin

Editorial Director

HUANG Kaiyan

Published by

Editorial Department of Chinese
Journal of Medical Physics

Address

School of Biomedical Engineering,
Southern Medical University,
Tonghe, Guangzhou
Postal code: 510515
Tel: 86-20-61648280
Fax: 020-61360581
Http://www.cjomp.com
E-mail: YXWL@263.net.cn
Wechat: cjomp001

Printed by

Guangzhou Yi Cai Printing
Co., Ltd

Domestic Subscription

Post offices all over China
Post office subscription code:
46-259

Overseas Subscription

China National Publishing
Industry Trading Corporation
(P.O.Box. 782, Beijing, China)

Mail Order

Editorial Department of Chinese
Journal of Medical Physics

China Standard Serial Numbering

ISSN 1005-202X

CN 44-1351/R

CONTENTS

Medical radiation physics

- MLC error detection using a late-fusion convolutional neural network in quality assurance for IMRT(925)
[YAN Bing, YU Xiao, WANG Shuai, WU Ailin, ZHANG Hongyan, WU Aidong](#)
- Application and evaluation of DIBH radiotherapy using RGSC for left-sided breast cancer(933)
[WEI Xiaping, SU Jiehong, LI Lin, AN Shixia, DONG Yanxin, HUANG Xiaowei, LIU Yeming, HUANG Mingchao](#)
- Exploring the effects of positioning methods on the superficial absorbed dose in postmastectomy radiation therapy using thermoluminescent dosimeter based on anthropomorphic phantom(938)
[WANG Qin, DENG Minmin, YU Yanjun, NI Wenjie, ZHANG Fuli](#)

Medical imaging physics

- Colorectal polyp segmentation in endoscopic images using DeepLab V3+(944)
[ZHU Shiqi, XU Chang, ZHOU Xin, LIU Lu, LIN Jiaxi, YIN Minyue, LIU Xiaolin, XU Chunfang, ZHU Jinzhou](#)
- Collateral circulation assessment in acute ischemic stroke based on low dose whole brain CT perfusion(950)
[WANG Yannan, ZHOU Junlin, NA Feiyang, LIU Xianwang, LIU Jianli](#)
- Early esophageal cancer image segmentation based on contextual feature awareness and dual frequency upsampling(957)
[MENG Yanzong, LI Xiaoxia, ZHOU Yingyue, WEN Liming, QIN Jiamin, LIU Shuangli](#)
- Conjunctival microvascular image acquisition and management system based on LabVIEW and its application(964)
[HUANG Yuanceng](#)
- Liver CT image tumor segmentation algorithm based on GAN-DAUnet(971)
[ZHOU Jinzhi, HU Zhen, GUO Lili, GONG Li, ZHANG Wengrong](#)
- Tongue multi-texture recognition using improved Faster RCNN(977)
[JI Changpeng, YANG Menghan, DAI Wei](#)
- Roles of ultrasound, MRI and chromosomal gene detection in the diagnosis of fetal brain abnormalities(985)
[ZHANG Guoliang, WANG Lishun, LI Weiwei, HUA Tianshu, WANG Qichen, ZHAO Yaoyao](#)
- Deep learning-based classification for benign and malignant breast masses using multimodal ultrasound images(988)
[WANG Yiwei, LI Xiaobing, NIE Shengdong, JIANG Lixin, WAN Caifeng, JIANG Zhuoyun, JIA Shouqiang](#)
- Malaria cell image recognition based on Swin Transformer(996)
[HE Pengfei, MA Jianfei, LI Chenglin, ZHANG Tongjing, LIANG Dawei](#)

Medical signal processing and medical devices

- Pose recognition method based on wearable device(1002)
[WU Qiuwen, LIAO Wei](#)





Atrial fibrillation detection based on long-term RR interval sequences of electrocardiogram	(1009)
FANG Dongshen, YE Qiying, SHI Shaobo, LIU Tao, LI Li	
Multi-board cooperative multi-channel endoscope image processing system	(1016)
CHEN Chuanyang, ZHANG Jingang, LIU Tiegen	

Medical biophysics

Effect of rivaroxaban combined with blood circulation driven pump on prevention and prognosis of deep vein thrombosis after surgery for spinal tuberculosis	(1022)
LIN Jie, WU Xiaoying, DING Lili	

Biomechanics and materials

Biomechanical research on lumbar intervertebral disc degeneration and effects of different loads	(1026)
ZHAO Xiyun, WEN Meng, GAO Guodong, QUAN Zhen, WANG Zhipeng, ZHANG Hongwei, QIN Daping, ZHANG Xiaogang	

Biomedical informatics

Risk factors analysis and prediction of diabetic retinopathy based on Null Importance and GS-LGBM	(1033)
CAO Jiayue, LUO Dongmei	
Construction of a MIMIC-III waveform database matched subset based on non-invasive blood pressure	(1039)
CHEN Zhiheng, YIN Cunfang, LUO Junqing	

Medical artificial intelligence

Artificial intelligence in ASPECTS assessment of acute ischemic stroke: a review	(1045)
FANG Ting, YANG Yifeng, JIA Shouqiang, NIE Shengdong	
Development of anatomical classification models for upper gastrointestinal endoscopy based on deep convolutional neural networks	(1051)
XU Guotong, WU Airong, LIN Jiaxi, GAO Xin, ZHOU Xin, GU Huiyuan, XU Chunfang, ZHU Jinzhou	

Executive Editor: HUANG Kaiyan

Executive Proofreaders: XUE Zeling TAN Siyun CHEN Lixia

English Editor: TAN Siyun

Editorial Assistant: LIAO Yanling