

中国医学物理学杂志

CHINESE JOURNAL OF MEDICAL PHYSICS

月刊 1984年创刊 2023年1月25日第40卷第1期(总第234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

AlignRT在乳腺癌术后放疗体表引导摆位中感兴趣区优选

.....李俊禹,杨敬贤,于松茂,卢子红,周舜,
陈吉祥,王振飞,丁大庆,王美娇,杜乙(1)

锥形束CT图像引导乳腺癌放疗中不同配准方法研究

.....刘姝言,高兴旺,刘懿梅,周杨,邓小武,陈仲本,彭应林(7)

EBT3胶片数字化的横向响应伪影消除方法

.....白凯,张鹏程,黄盛聪,祁宁,李强,刘新国(13)

统计过程控制方法在后装¹⁹²Ir放射源空气比释动能强度验证中的应用

.....罗斌,李贤富,曹璐,阳华东,许鹏,郭飞,谢力(19)

医学影像物理

基于改进SOLO_v2的糖尿病黄斑水肿分割模型

.....郑宗生,唐鹏飞,王振华,卢鹏(24)

基于频域约束和交叉融合特征网络的磁共振图像超分辨率重建算法

.....李嘉丽,王国中,赵海武(31)

结合通道权重更新与密集残差金字塔空间注意力的皮肤病变分割方法

.....陈菁菁,李小霞,吕念祖(39)

结合上下文和注意力机制改进的视盘分割模型

.....王振华,刘阳星,赵晓雨,张书台(47)

硫化铅量子点辅助近红外二区荧光成像技术在活体应用中的研究进展

.....李慧,朱丽君,古丽妮尔·阿里木,闫婷,张学良,努尔尼沙·阿力甫(54)

基于三维图像的大脑病灶显示和分析

.....蒋先刚,张红斌(61)

CT-FFR参数联合斑块定量技术在心肌缺血再灌注损伤预测中的应用

.....王圣楠,卜荣生,杜静茹,王耀国,吴淳淳(66)

虚拟肝脏重建与形变切割仿真

.....高海国,贾世宇(71)

基于3DV-Net的肺结节检测分割算法

.....刘方,孙鹏,陈真诚(77)

儿童阑尾炎的超声特征与病理分型分析

.....黄兰,何琛波,罗元臣,张英(83)

医学信号处理与医学仪器

基于空洞卷积神经网络的心律失常分类算法秦默然,李宙童,翟月英,史纪广,纪洁维,常胜,王豪,何进,黄启俊(87)

电磁搏动式血泵的温度场仿真分析叶君军,严荣国,梅竹松,邵泓燃,魏梦林(95)

先天性心脏病筛查系统设计李江,李丕丁(100)

医学生物物理

基于时间干涉无创神经调控方法的研究进展朱浩然,槐瑞托,张平丘,汪慧(107)

医学人工智能

改进的YOLOv4算法在肺结核检测中的应用研究王京华,袁金丽,郭志涛,王佳浩(113)

基于深度学习的舌象自监督聚类罗思言,王心舟,饶向荣(120)

基于MRI和血流动力学仿真的主动脉缩窄计算机辅助诊断系统
.....史宇兵,Israel Valverde,Patricia V. Lawford,D. Rodney Hose(126)

责任编辑:薛泽玲
责任校对:黄开颜 陈丽霞 谭斯允
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 * 2023-01

Responsible Institution

Southern Medical University

Sponsored bySouthern 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 byEditorial 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**

Determining the optimal region of interest for AlignRT-guided positioning in postoperative radiotherapy for breast cancer(1)

LI Junyu, YANG Jingxian, YU Songmao, LU Zihong, ZHOU Shun, CHEN Jixiang,
WANG Zhenfei, DING Daqing, WANG Meijiao, DU Yi

Comparison of different registration methods in cone beam CT image guided radiotherapy for breast cancer(7)

LIU Shuyan, GAO Xingwang, LIU Yimei, ZHOU Yang, DENG Xiaowu, CHEN
Zhongben, PENG Yinglin

Eliminating lateral response artifact for EBT3 radiochromic film digitization(13)

BAI Kai, ZHANG Pengcheng, HUANG Shengcong, QI Ning, LI Qiang, LIU Xinguo

Application of statistical process control method in verification of air-kerma strength of ¹⁹²Ir brachytherapy source(19)

LUO Bin, LI Xianfu, CAO Lu, YANG Huadong, XU Peng, GUO Fei, XIE Li

Medical imaging physics

A novel model for diabetic macular edema segmentation based on improved SOLO_v2.....(24)

ZHENG Zongsheng, TANG Pengfei, WANG Zhenhua, LU Peng

Magnetic resonance image super-resolution reconstruction based on frequency-domain constraints and cross-fusion feature(31)

LI Jiali, WANG Guozhong, ZHAO Haiwu

Skin lesion segmentation method combining channel weight update and dense residual pyramid spatial attention(39)

CHEN Jingjing, LI Xiaoxia, LÜ Nianzu

Optic disc segmentation model improved by contextual information and attention mechanism(47)

WANG Zhenhua, LIU Yangxing, ZHAO Xiaoyu, ZHANG Shutai

Advances in *in vivo* application of lead sulfide quantum dots assisted NIR-II fluorescence imaging technology(54)

LI Hui, ZHU Lijun, ALIMU Gulnigaer, YAN Ting, ZHANG Xueliang, ALIFU Nuernisha

Brain lesion display and analysis based on 3D rendering(61)

JIANG Xiangang, ZHANG Hongbin

Predictive value of CT-FFR combined with plaque quantification for reperfusion injury in patients with myocardial ischemia(66)

WANG Shengnan, BU Rongsheng, DU Jingru, WANG Yaoguo, WU Chunchun

Reconstruction of virtual liver and its deformation and cutting simulations(71)

GAO Haiguo, JIA Shiyu

Detection and segmentation of pulmonary nodules using improved 3DV-Net(77)

LIU Fang, SUN Peng, CHEN Zhencheng

Ultrasound characteristics and pathological classifications of appendicitis in children(83)

HUANG Lan, HE Chenbo, LUO Yuanchen, ZHANG Ying

Medical signal processing and medical devices

- Arrhythmia detection algorithm based on dilated convolutional neural network(87)
QIN Moran, LI Zhoutong, ZHAI Yueying, SHI Jiguang, JI Jiewei, CHANG Sheng, WANG Hao, HE Jin, HUANG Qijun
- Simulation analysis on temperature field of an electromagnetic pulsating blood pump.....(95)
YE Junjun, YAN Rongguo, MEI Zhusong, SHAO Hongran, WEI Menglin
- Design of a congenital heart disease screening system(100)
LI Jiang, LI Piding

Medical biophysics

- Advances in noninvasive neuromodulation methods based on temporally interfering electric fields(107)
ZHU Haoran, HUAI Ruituo, ZHANG Pingqiu, WANG Hui

Medical artificial intelligence

- Application of improved YOLOv4 algorithm in the detection of pulmonary tuberculosis(113)
WANG Jinghua, YUAN Jinli, GUO Zhitao, WANG Jiahao
- Self-supervised clustering of tongue images based on deep learning(120)
LUO Siyan, WANG Xinzhou, RAO Xiangrong
- Computer-aided diagnosis system for aortic coarctation based on MRI and hemodynamic simulation(126)
SHI Yubing, Israel Valverde, Patricia V. Lawford, D. Rodney Hose

Executive Editor: XUE Zeling

Executive Proofreaders: HUANG Kaiyan CHEN Lixia TAN Siyun

English Editor: TAN Siyun

Editorial Assistant: LIAO Yanling