

国家自然科学基金专项资助期刊

# 物 理 学 报

第 59 卷 第 10 期 2010 年 10 月



中国科学院科学出版基金资助出版

## 目 录

### 0000 总 论

- 0230 海-气振子厄尔尼诺-南方涛动模型的近似解 ..... 莫嘉琪 林一骅 林万涛 (6707)
- 0230 一般格子方程新的无穷序列精确解 ..... 套楼图桑 (6712)
- 0230 (2+1)维 Korteweg-de Vries 方程的传播孤子及混沌行为 ..... 吴红玉 马松华 方建平 (6719)
- 0250 同时考虑传染媒介和传播延迟的复杂网络病毒传播行为研究 ..... 王亚奇 蒋国平 (6725)
- 0250 复杂网络中考虑不完全免疫的病毒传播研究 ..... 王亚奇 蒋国平 (6734)
- 0250 基于 Markov 性质的一阶安全算术编码及应用 ..... 段黎力 廖晓峰 向涛 (6744)
- 0260 三维非线性 Schrödinger 方程的直接微扰方法 ..... 程雪苹 林机 韩平 (6752)
- 0260 分数阶 Oldroyd-B 黏弹性 Poiseuille 流的 Laplace 数值反演分析 .....  
..... 王羽 欧阳洁 杨斌鑫 (6757)
- 0320 微扰 Kepler 系统轨道微分方程的近似 Lie 对称性与近似不变量 ..... 楼智美 (6764)
- 0340D 一类相对转动时滞非线性动力系统的稳定性分析 ..... 刘浩然 朱占龙 时培明 (6770)
- 0340G 液气共存的耗散粒子动力学模拟 ..... 王晓亮 陈硕 (6778)
- 0340G 槽道湍流的展向振荡电磁力壁面减阻 ..... 梅栋杰 范宝春 黄乐萍 董刚 (6786)
- 0340K mKdV-sine-Gordon 方程丰富的相互作用解 ..... 吕大昭 崔艳英 刘长河 张艳 (6793)
- 0365 控制 Tavis-Cummings 模型中两原子 X 态的纠缠突然死亡与突然产生 .....  
..... 单传家 刘继兵 陈涛 刘堂昆 黄燕霞 李宏 (6799)
- 0365 Schwinger Bose 实现下自旋相干态 Wigner 函数的特性分析 ..... 宋军 范洪义 (6806)
- 0365 耗散环境下原子-库场相互作用系统中原子的偶极压缩特性 .....  
..... 潘长宁 赵学辉 杨迪武 方卯发 (6814)
- 0365G 环状非有心势场中 Schrödinger 方程的精确解 ..... 张民仓 皇甫国庆 (6819)
- 0365S 强磁场中 Rydberg NO 分子的回归谱研究 ..... 李洪云 刘伟 林圣路 (6824)
- 0367 周期脉冲撞击的两分量 Bose-Einstein 凝聚系统的单粒子相干和对纠缠 .....  
..... 严冬 宋立军 (6832)
- 0367 基于核磁共振的子空间量子过程重构 .....  
..... 姚浙伟 曾碧榕 刘钦 牟晓阳 林星程 杨春 潘健 陈忠 (6837)
- 0420 包围有暗能量黑洞的 Hawking 辐射修正 ..... 龚添喜 王永久 (6842)
- 0420 Barriola-Vilenkin 黑洞 Dirac 场的广义 Stefan-Boltzmann 定律 ..... 孟庆苗 李中让 李玉山 (6847)
- 0545 分数阶混沌系统与整数阶混沌系统之间的同步 ..... 周平 邝菲 (6851)
- 0545 Duffing 振子系统周期解的唯一性与精确周期信号的获取方法 .....  
..... 王坤 关新平 丁喜峰 乔杰敏 (6859)
- 0545 大规模富社团网络的时空混沌同步 .....

- ..... 吕 翎 邹家蕊 杨 明 孟 乐 郭 丽 柴 元(6864)
- 0545 基于空间基函数客观拟合的副高突变与多态机理分析 .....
- ..... 洪 梅 张 韧 何金海 薛 峰 葛晶晶(6871)
- 0570C Cu<sub>3</sub>N 弹性和热力学性质的第一性原理研究 ..... 李世娜 刘 永(6882)
- 0590 基于 Web 2.0 的边与节点同时增长网络模型 ..... 熊 菲 刘 云 司夏萌 丁 飞(6889)
- 0710C 基于剪应力检测的石英微结构及其陀螺效应研究 .....
- ..... 谢立强 吴学忠 李圣怡 王浩旭 董培涛(6896)
- 0710C 微平面接触分离中弯月面力的计算 ..... 刘思思 张朝辉 刘俊铭(6902)
- 0765 高浓度气体共振光声光谱信号饱和和特性研究 .....
- ..... 袁长迎 炎正馨 蒙 瑰 李智慧 尚丽平(6908)
- 0765G 基于多波长激光吸收光谱技术的气体浓度与温度二维分布遗传模拟退火重建研究 .....
- ..... 李 宁 翁春生(6914)
- 0779 线性偏振光激发的错位表面等离子体激元纳米结构聚焦 .....
- ..... 宋文涛 林 峰 方哲宇 朱 星(6921)
- 0785 硬 X 射线相位光栅的设计与研制 ..... 刘 鑫 雷耀虎 赵志刚 郭金川 牛慧策(6927)
- 2000 核物理学**
- 2570 核物质状态方程中动量相关作用可能的探针 ..... 刘建业 郭文军(6933)
- 2970F 基于阈值光电子-光离子符合技术的分子离子光谱和解离动力学研究 .....
- ..... 唐小锋 牛铭理 周晓国 刘世林(6940)
- 3000 原子和分子物理学**
- 3250F HeLa 细胞突起中微丝束的纳米分辨荧光成像 ..... 陈丹妮 刘 磊 于 斌 牛慧策(6948)
- 3640 密度泛函理论对 Zr<sub>n</sub>Pd 团簇结构和性质的研究 ..... 金 蓉 谌晓洪(6955)
- 4000 唯象论的经典领域**
- 4110D 空间电荷效应对 X 射线条纹相机动态范围影响的研究 .....
- ..... 袁永腾 郝轶聃 赵宗清 侯立飞 缪文勇(6963)
- 4110H 二维有耗色散介质的时域逆散射方法 ..... 刘广东 张业荣(6969)
- 4225F 折射/谱衍射红外双波段成像光谱仪系统研究 .....
- ..... 刘 英 孙 强 卢振武 曲 锋 吴宏圣 李 淳(6980)
- 4225F 目标激光脉冲一维距离成像研究 ..... 李艳辉 吴振森 官彦军 张 耿 王明军(6988)
- 4230K Fourier 频率域随机谱隐密信息加载与增量补偿系统 .....
- ..... 王晓雷 李智磊 翟宏琛 王明伟(6994)
- 4230Q 基于光纤自相位调制多波长全光再生的色散管理优化 .....
- ..... 张 婧 潘 炜 闫连山 罗 斌(7002)
- 4250 闭合  $\Lambda$  型 4 能级系统中的电磁诱导透明和电磁诱导吸收 .....
- ..... 李晓莉 张连水 杨宝柱 杨丽君(7008)
- 4255R Nd:YAG 纳秒激光诱导硅表面微结构的演化 .....
- ..... 袁春华 李晓红 唐多昌 杨宏道 李国强(7015)
- 4255V 利用单飞秒激光脉冲驱动类氩钛 X 射线激光的研究 .....
- ..... 郑炳松 孙彦乾 陈 俞 马景龙 李英俊(7020)
- 4260 斜抽运无机液体激光器的流场热分布 .....
- ..... 胡 滔 魏泳涛 宋影松 张玉明 李 密 马再如 冯国英(7027)
- 4260B 交叉偏振滤波技术提高飞秒超强激光信噪比的研究 .....
- ..... 刘 成 王兆华 李伟昌 刘 峰 魏志义(7036)

- 4265 飞秒啁啾 Gauss 型脉冲在稠密  $\Lambda$  型三能级原子介质中的传播 ..... 王振东 梁 变 刘中波 樊锡君 (7041)
- 4265 准相位匹配倍频系统的带宽性质研究 ..... 任爱红 刘正颖 张蓉竹 刘静伦 孙年春 (7050)
- 4265 硅的间接跃迁双光子吸收系数谱 ..... 崔昊杨 李志锋 马法君 陈效双 陆 卫 (7055)
- 4270Q Archimedes  $3^2, 4, 3, 4$  结构光子晶体中与偏振无关的自准直分束器 ..... 钟 琪 韩 奎 沈晓鹏 童 星 吴琼华 李明雪 吴玉喜 (7060)
- 4270Q 含单负特异材料一维无序扰动周期结构中的光子局域特性研究 ..... 刘冬梅 韩 鹏 (7066)
- 4270Q 二维 GaAs 基光子晶体微腔的制作与光谱特性分析 ..... 彭银生 叶小玲 徐 波 牛浩斌 贾 锐 王占国 梁 松 杨晓红 (7073)
- 4272 同步辐射标定平面镜反射率不确定度分析方法研究 ..... 陈伯伦 杨正华  
曹柱荣 董建军 侯立飞 崔延莉 江少恩 易荣清 李三伟 刘慎业 杨家敏 (7078)
- 4280L 一种胶体光子晶体修饰的光纤 ..... 刘 青 王 鸣 郭文华 闫海涛 喻 平 (7086)
- 4280M 双包层多芯光子晶体光纤自相干合成的数值分析与实验 ..... 韩伟涛 侯蓝田 耿鹏程 (7091)
- 4280Q 采用 Si 薄膜的光子计数成像系统性能的研究 ..... 赵菲菲 刘永安 胡慧君 赵宝升 (7096)
- 4281W 输出近百纳焦耳脉冲能量的光子晶体光纤锁模激光器 ..... 宋有建 胡明列 谢 辰 柴 路 王清月 (7105)
- 4320 基于时间反转理论的聚焦 Lamb 波结构损伤成像 ..... 张海燕 孙修立 曹亚萍 陈先华 于建波 (7111)
- 4410 纳秒激光烧蚀铝材料的二维数值模拟 ..... 张朋波 秦 颖 赵纪军 温 斌 (7120)
- 4410 基于热质理论的 Hamilton 原理 ..... 宋 柏 吴 晶 过增元 (7129)
- 4610 两个三阶最优优化力梯度辛积分器的对称组合 ..... 李 荣 伍 歆 (7135)
- 4660H 极性分子型电流变液导电机理研究 ..... 王学昭 沈 容 路 阳 纪爱玲 孙 刚 陆坤权 崔 平 (7144)
- 4735 三层流体系统非线性界面内波传播理论的研究 ..... 温文媛 陈小刚 宋金宝 (7149)
- 5000 流体、等离子体和放电**
- 5110 基于反转法的  $O_2$ - $CO_2$  输运性质预测 ..... 王晓坡 宋 渤 吴江涛 刘志刚 (7158)
- 5220 非平衡磁控溅射双势阱静电波动及其共振耦合 ..... 牟宗信 牟晓东 贾 莉 王 春 董 闯 (7164)
- 5225 神光 III 原型单端驱动黑腔等离子体聚心时间研究 ..... 曹柱荣 李三伟  
江少恩 丁永坤 刘慎业 杨家敏 张海鹰 杨正华 黎 航 易荣清 何小安 (7170)
- 5225 HT-7 Tokamak 离子回旋波和低杂波等离子体逃逸电子行为研究 ..... 卢洪伟 胡立群 周瑞杰 许 平 钟国强 林士耀 王少锋 (7175)
- 5225F 磁场梯度对 Hall 推力器放电特性影响的实验研究 ..... 鄂 鹏 段 萍 江滨浩 刘 辉 魏立秋 徐殿国 (7182)
- 5240 强场和弱场侧超声分子束注入对加料的影响 ..... 焦一鸣 姚良骅 冯北滨 陈程远 周 艳 石中兵 董家齐 段旭如 (7191)
- 5250 数值模拟飞秒激光加热金属的热电子发射 ..... 陈安民 高 勋 姜远飞 丁大军 刘 航 金明星 (7198)
- 5265 ATON 型 Hall 推力器缓冲区预电离问题研究 ..... 刘 辉 吴勃英 鄂 鹏 段 萍 (7203)
- 5270 小波变换在 HT-7 Tokamak 磁流体动力学振荡动态频谱分析中的应用 ..... 马天鹏 胡立群 陈开云 (7209)

**6000 凝聚物质:结构、热学和力学性质**

- 6110M  $\text{Cr}^{4+}:\text{Ca}_2\text{GeO}_4$  激光晶体生长及结构表征 .....  
..... 张山丽 曾黎明 王欣桐 李 春 王成伟 张 莹 林 海 秦杰明 刘景和(7214)
- 6110M In 掺杂对 n 型方钴矿化合物的微结构及热电性能的影响规律 .....  
..... 周 龙 李 涵 苏贤礼 唐新峰(7219)
- 6120J 样品温度对  $\text{CF}_3^+$  与 Si 表面相互作用影响的分子动力学模拟 .....  
..... 宁建平 吕晓丹 赵成利 秦尤敏 贺平逆 A. Bogaerts 苟富君(7225)
- 6146  $\text{Sb}_2\text{Te}_3$  纳米结构的制备与表征 ..... 张 帆 朱航天 骆 军 梁敬魁 饶光辉 刘泉林(7232)
- 6150C 基于等离子体增强化学气相沉积技术的光电子器件多层抗反膜的设计和制作 .....  
..... 袁 贺 孙长征 徐建明 武 庆 熊 兵 罗 毅(7239)
- 6150C 原子掺杂对单元材料结晶能力的影响 .....  
..... 彭 坤 明 辰 叶祥熙 张文献 庄 军 宁西京(7245)
- 6170P 强流脉冲电子束作用下金属纯 Cu 的微观结构状态——空位簇缺陷及表面微孔结构 .....  
..... 王雪涛 关庆丰 邱冬华 程秀围 李 艳 彭冬晋 顾倩倩(7252)
- 6185 基于准连续介质方法模拟纳米多晶体 Ni 中裂纹的扩展 ..... 邵宇飞 王绍青(7258)
- 6670 含有格点势的一维 Fibonacci 链热传导性质的研究 ..... 徐 慧 崔麦玲 马松山(7266)
- 6810 关于固体表面上液体球冠的平衡条件问题 ..... 朱如曾 闫 红 王小松(7271)
- 6810J Cl 原子在  $\gamma\text{-TiAl}(111)$  表面吸附的第一性原理研究 ... 吴小霞 王乾恩 王福合 周云松(7278)
- 7000 凝聚物质:电子结构、电学、磁学和光学性质**
- 7115A N 掺杂  $\text{SnO}_2$  材料光电性质的第一性原理研究 ..... 于 峰 王培吉 张昌文(7285)
- 7115M Ga 和 Sb 纳米线声子结构和电子-声子相互作用的第一性原理研究 .....  
..... 孙伟峰 李美成 赵连城(7291)
- 7115Q 分子核间距对非时序双电离的影响 ..... 魏雅娜 杨世平(7298)
- 7170C  $\text{Nd}^{3+}:\text{Gd}_3\text{Sc}_2\text{Al}_3\text{O}_{12}$  晶场能级及拟合 .....  
..... 肖 进 张庆礼 周文龙 谭晓靓 刘文鹏 殷绍唐 江海河 夏上达 郭常新(7306)
- 7215J  $\text{Bi}_2\text{Te}_3$  合金低温热电性能及冷能发电研究 .....  
..... 蒋明波 吴智雄 周 敏 黄荣进 李来凤(7314)
- 7215Q 自旋极化对 Kondo 系统基态的影响 ..... 黎 欢 郭 卫(7320)
- 7250 温度梯度场对电声脉冲法空间电荷测量波形的影响 .....  
..... 陈 曦 王 霞 吴 锴 彭宗仁 成永红(7327)
- 7320D 增强型 AlGaIn/GaN 高电子迁移率晶体管高温退火研究 .....  
..... 王 冲 全 思 马晓华 郝 跃 张进城 毛 维(7333)
- 7360 二阶 Y 环频率选择表面的设计研究 .....  
..... 高劲松 王珊珊 冯晓国 徐念喜 赵晶丽 陈 红(7338)
- 7510J 一维铁磁链中量子孤波的能级和磁矩 ..... 李德俊 米贤武 邓 科(7344)
- 7510J 双层反铁磁体  $\text{K}_3\text{Cu}_2\text{F}_7$  中轨道序驱动的自旋二聚化 ..... 陈东猛 刘大勇(7350)
- 7660E 铁磁/反铁磁双层膜中的磁锻炼效应 ..... 许 勉 潘 靖 沈 影 胡经国(7357)
- 7847 铁磁薄膜中圆偏振光感应的瞬态磁光 Kerr 峰的物理起源 .....  
..... 陈达鑫 陈志峰 徐初东 赖天树(7362)
- 7865 太阳能光伏-温差发电驱动的新型冰箱模型设计与热力学分析 .....  
..... 刘永生 谷民安 杨晶晶 石奇光 高 滢 杨金焕 杨正龙(7368)
- 7870B 单晶固体中正电子波函数的计算 .....  
..... 熊 涛 张 杰 陈祥磊 叶邦角 杜淮江 翁惠民(7374)

**8000 物理学交叉学科及有关科学技术领域**

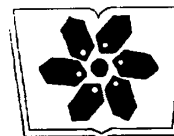
- 8115H 激发频率对高氢稀释下纳米晶硅薄膜生长特性的影响 .....  
..... 宋捷 郭艳青 王祥 丁宏林 黄锐(7378)
- 8116 颗粒状纳米碳酸钡锶钙的研制 ..... 王其富 王小霞 罗积润 赵青兰(7383)
- 8120E 双层钙钛矿  $\text{La}_{1.8}\text{Ca}_{1.2}\text{Mn}_2\text{O}_7$  磁性相关  $I$ - $V$  非线性与电输运性质 .....  
..... 邓恒 杨昌平 黄昌 徐玲芳(7390)
- 8120L  $\text{BaFe}_{0.4}\text{Sn}_{0.6}\text{O}_3/\text{BaBiO}_3$  负温度系数复合热敏陶瓷阻抗分析 .....  
..... 袁昌来 刘心宇 杨云 许积文 谷岩(7396)
- 8120S 打结高分子链穿孔行为的研究 ..... 温晓会 章林溪(7404)
- 8120V 退火对 B 掺杂纳米金刚石薄膜的微结构和电化学性能的影响 .....  
..... 潘金平 胡晓君 陆利平 印迟(7410)
- 8130 受迫流动下的枝晶生长相场法模拟研究 ..... 朱昌盛 王军伟 王智平 冯力(7417)
- 8130 切向流动对偏晶合金定向生长机理的影响 ..... 王建元 陈长乐 翟薇 金克新(7424)
- 8130F 低扩散系数对  $\text{Pd}_{77}\text{Cu}_6\text{Si}_{17}$  合金易非晶化的影响 ..... 王振中 王楠 姚文静(7431)
- 8160C CdTe 太阳能电池前电极  $\text{SnO}_2:\text{F}/\text{SnO}_2$  复合薄膜性能分析 .....  
..... 曾广根 黎兵 郑家贵 武莉莉 张静全 雷智 李卫 冯良桓(7437)
- 8270R 火灾烟颗粒分形模型和球形模型光散射的比较研究 .....  
..... 张青 邓小玖 张启兴 李耀东 张永明(7442)
- 8280T 基于热膨胀性质的  $\text{ZrO}_2$  固体电解质性能与相关系模型 .....  
..... 胡永刚 肖建中 夏凤 武玺旺 闫双志(7447)
- 8640K  $\text{NaAlH}_4$  表面 Ti 催化空间构型和 X 射线吸收光谱;Car-Parrinello 分子动力学和密度泛函理论  
研究 ..... 周晶晶 陈云贵 吴朝玲 肖艳 高涛(7452)
- 8715 碱基对组分、电极位能及界面耦合对 DNA 分子  $I$ - $V$  特性的影响 .....  
..... 马松山 朱佳 徐慧 郭锐(7458)
- 8760I 基于核磁共振弹性成像技术的肝纤维化分级体模研究 ..... 汪红志 许凌峰  
俞捷 黄清明 王晓琰 陆伦 王鹤 黄勇 程红岩 张学龙 李夔颖(7463)
- 9000 地球物理学、天文学和天体物理学**
- 9160F 稀有气体在电离区压缩特性研究 ..... 郑君 顾云军 陈其峰 陈志云(7472)
- 9260Q 基于降雨率的 GMF + RAIN 模型构建及在台风风场反演中的应用 .....  
..... 张亮 黄思训 钟剑 杜华栋(7478)
- 9260X 极端事件再现时间长程相关性与群发性研究 .....  
..... 王启光 侯威 郑志海 冯爱霞 邓北胜(7491)
- 9260X 中国夏冬两季最概然温度分布及其增温趋势减缓 ..... 钱忠华 封国林 龚志强(7498)
- 9580D 一种用于认知无线电资源分配的并行免疫遗传算法 ..... 周杰 俎云霄(7508)
- 9870J 基于双谱估计的 BL Lac 天体 S5 0716 + 714 光变周期 ..... 唐洁 张雄(7516)
- 9870V 深空背景下空间目标红外特性建模方法研究 ..... 孙成明 袁艳 张修宝(7523)



Supported by the National Natural  
Science Foundation of China



**ACTA PHYSICA SINICA**  
**Vol. 59, No. 10, October 2010**  
**CONTENTS**



Supported by the Science Publication  
Foundation, Chinese Academy of Sciences

**0000 GENERAL**

- 0230 Approximate solution of sea-air oscillator for El Niño-southern oscillation model .....  
..... *Mo Jia-Qi, Lin Yi-Hua, Lin Wan-Tao*(6711)
- 0230 New infinite sequence exact solutions to the general lattice ..... *Taogetusang*(6718)
- 0230 Propagating solitons and chaotic behaviour of  $(2 + 1)$ -dimensional Korteweg-de Vries system .....  
..... *Wu Hong-Yu, Ma Song-Hua, Fang Jian-Ping*(6724)
- 0250 Spreading of epidemics in complex networks with infective medium and spreading delay .....  
..... *Wang Ya-Qi, Jiang Guo-Ping*(6733)
- 0250 Virus spreading on complex networks with imperfect immunization ..... *Wang Ya-Qi, Jiang Guo-Ping*(6743)
- 0250 Image encryption based on arithmetic coding with order-1 Markov model .....  
..... *Duan Li-Li, Liao Xiao-Feng, Xiang Tao*(6751)
- 0260 Direct perturbation method applied to three-dimensional nonlinear Schrödinger equation .....  
..... *Cheng Xue-Ping, Lin Ji, Han Ping*(6756)
- 0260 Analysis on fractional Oldroyd-B viscoelastic Poiseuille flow by numerical inversion of Laplace transforms  
..... *Wang Yu, Ouyang Jie, Yang Bin-Xin*(6763)
- 0320 Approximate Lie symmetries and approximate invariants of the orbit differential equation for perturbed  
Kepler system ..... *Lou Zhi-Mei*(6769)
- 0340D Stability analysis of a relative rotation time-delays nonlinear dynamic system .....  
..... *Liu Hao-Ran, Zhu Zhan-Long, Shi Pei-Ming*(6777)
- 0340G Simulation of vapor-liquid coexistence using dissipative particle dynamics .....  
..... *Wang Xiao-Liang, Chen Shuo*(6785)
- 0340G Drag reduction in turbulent channel flow by spanwise oscillating Lorentz force .....  
..... *Mei Dong-Jie, Fan Bao-Chun, Huang Le-Ping, Dong Gang*(6792)
- 0340K Abundant interaction solutions of the mKdV-sine-Gordon equation .....  
..... *Lü Da-Zhao, Cui Yan-Ying, Liu Chang-He, Zhang Yan*(6798)
- 0365 Controlling entanglement sudden birth and sudden death of two-atom  $X$ -states in Tavis-Cummings model  
..... *Shan Chuan-Jia, Liu Ji-Bing, Chen Tao, Liu Tang-Kun, Huang Yan-Xia, Li Hong*(6805)
- 0365 Properties of Wigner function of spin coherent states based on Schwinger Bose operator realization ...  
..... *Song Jun, Fan Hong-Yi*(6813)
- 0365 Dipole squeezing of atomic systems in dissipative environment .....  
..... *Pan Chang-Ning, Zhao Xue-Hui, Yang Di-Wu, Fang Mao-Fa*(6818)
- 0365G Exact solutions of the Schrödinger equation for a noncentral ring-shaped potential .....  
..... *Zhang Min-Cang, Huangfu Guo-Qing*(6823)
- 0365S Recurrence spectra of Rydberg NO molecules in a strong magnetic field .....  
..... *Li Hong-Yun, Liu Wei, Lin Sheng-Lu*(6831)
- 0367 Single-particle coherence and pairwise entanglement in a two-component Bose-Einstein condensate impacted

(Continued)

- by the periodic impulses ..... *Yan Dong, Song Li-Jun*(6836)
- 0367 Subspace quantum process tomography via nuclear magnetic resonance ..... *Yao Xi-Wei, Zeng Bi-Rong, Liu Qin, Mu Xiao-Yang, Lin Xing-Cheng, Yang Chun, Pan Jian, Chen Zhong*(6841)
- 0420 Corrections to Hawking radiation from the black hole surrounded by quintessence .....  
..... *Gong Tian-Xi, Wang Yong-Jiu*(6846)
- 0420 Generalized Stefan-Boltzmann law of the Dirac field of Barriola-Vilenkin black hole .....  
..... *Meng Qing-Miao, Li Zhong-Rang, Li Yu-Shan*(6850)
- 0545 Synchronization between fractional-order chaotic system and chaotic system of integer orders .....  
..... *Zhou Ping, Kuang Fei*(6858)
- 0545 Acquisition method of precise periodic signal and uniqueness of periodic solutions of Duffing oscillator system ..... *Wang Kun, Guan Xin-Ping, Ding Xi-Feng, Qiao Jie-Min*(6863)
- 0545 Synchronization of spatiotemporal chaos in large scale rich-club network .....  
..... *Lü Ling, Zou Jia-Rui, Yang Ming, Meng Le, Guo Li, Chai Yuan*(6870)
- 0545 Mechanism analysis of the abnormal activities and polymorphism in subtropical high based on the objective fitting of space-basis function ..... *Hong Mei, Zhang Ren, He Jing-Hai, Xue Feng, Ge Jing-Jing*(6881)
- 0570C First-principles calculation of elastic and thermodynamic properties of copper nitride .....  
..... *Li Shi-Na, Liu Yong*(6888)
- 0590 Network model with synchronously increasing nodes and edges based on Web 2.0 .....  
..... *Xiong Fei, Liu Yun, Si Xia-Meng, Ding Fei*(6895)
- 0710C A novel quartz micro-structure based on shear stress detection and its gyroscopic effect .....  
..... *Xie Li-Qiang, Wu Xue-Zhong, Li Sheng-Yi, Wang Hao-Xu, Dong Pei-Tao*(6901)
- 0710C Calculation of meniscus force during separation of microspheres .....  
..... *Liu Si-Si, Zhang Chao-Hui, Liu Jun-Ming*(6907)
- 0765 Photoacoustic signal saturation characteristics of concentrated gases .....  
..... *Yuan Chang-Ying, Yan Zheng-Xin, Meng Gui, Li Zhi-Hui, Shang Li-Ping*(6913)
- 0765G Gas concentration and temperature reconstruction by genetic simulated annealing algorithm based on multi-wavelengths diode laser absorption spectroscopy ..... *Li Ning, Weng Chun-Sheng*(6920)
- 0779 Nanofocusing by phase delayed plasmonic nanostructures illuminated with a linearly polarized light .....  
..... *Song Wen-Tao, Lin Feng, Fang Zhe-Yu, Zhu Xing*(6926)
- 0785 Design and fabrication of hard x-ray phase grating .....  
..... *Liu Xin, Lei Yao-Hu, Zhao Zhi-Gang, Guo Jin-Chuan, Niu Han-Ben*(6932)
- 2000 NUCLEAR PHYSICS**
- 2570 Possible probe on the momentum dependent interaction in the equation of state of nuclear matter .....  
..... *Liu Jian-ye, Guo Wen-Jun*(6939)
- 2970F Spectroscopic studies of molecular ions and their dissociation dynamics by the threshold photoelectron-photoion coincidence ..... *Tang Xiao-Feng, Niu Ming-Li, Zhou Xiao-Guo, Liu Shi-Lin*(6947)
- 3000 ATOMIC AND MOLECULAR PHYSICS**
- 3250F Nano-resolution imaging of filopodia in HeLa cells ..... *Chen Dan-Ni, Liu Lei, Yu Bin, Niu Han-Ben*(6954)
- 3640 Structure and properties of Zr<sub>n</sub>Pd clusters by density-functional theory .....  
..... *Jin Rong, Chen Xiao-Hong*(6962)
- 4000 CLASSICAL AREAS OF PHENOMENOLOGY**
- 4110D Dynamic range of x ray streak camera affected by space charge effect .....  
..... *Yuan Yong-Teng, Hao Yi-Dan, Zhao Zong-Qing, Hou Li-Fei, Miao Wen-Yong*(6968)
- 4110H Time-domain inverse scattering problem for two-dimensional frequency-dispersive lossy media .....  
..... *Liu Guang-Dong, Zhang Ye-Rong*(6979)
- 4225F Hyper-spectral imaging system with harmonic diffraction element in medium and far infrared .....  
..... *Liu Ying, Sun Qiang, Lu Zhen-Wu, Qu Feng, Wu Hong-Sheng, Li Chun*(6987)

- 4225F Laser one-dimensional range profile .....  
..... *Li Yan-Hui, Wu Zhen-Sen, Gong Yan-Jun, Zhang Geng, Wang Ming-Jun*(6993)
- 4230K The system of loading hidden information in random spectrum of Fourier domain and incremental compensation .....  
..... *Wang Xiao-Lei, Li Zhi-Lei, Zhai Hong-Chen, Wang Ming-Wei*(7001)
- 4230Q Dispersion management optimization of multi-wavelength all-optical regeneration based on self-phase modulation .....  
..... *Zhang Jing, Pan Wei, Yan Lian-Shan, Luo Bin*(7007)
- 4250 Electromagnetically induced absorption and transparency in a closed lambda-shaped four-level system .....  
..... *Li Xiao-Li, Zhang Lian-Shui, Yang Bao-Zhu, Yang Li-Jun*(7014)
- 4255R Evolution of silicon surface microstructure induced by Nd:YAG nanosecond laser .....  
..... *Yuan Chun-Hua, Li Xiao-Hong, Tang Duo-Chang, Yang Hong-Dao, Li Guo-Qiang*(7019)
- 4255V Ne-like Ti x-ray laser driven by a single femtosecond laser .....  
..... *Zheng Bing-Song, Sun Yan-Qian, Chen Yu, Ma Jing-Long, Li Ying-Jun*(7026)
- 4260 The flow field heat distribution of inorganic liquid laser under oblique pumping .....  
..... *Hu Tao, Wei Yong-Tao, Song Ying-Song, Zhang Yu-Ming, Li Mi, Ma Zai-Ru, Feng Guo-Ying*(7035)
- 4260B Enhancement of contrast ratio in chirped pulse amplified laser system by cross-polarized wave generation .....  
..... *Liu Cheng, Wang Zhao-Hua, Li Wei-Chang, Liu Feng, Wei Zhi-Yi*(7040)
- 4265 Propagation of femtosecond chirped Gaussian pulse in dense three-level  $\Lambda$ -type atomic medium .....  
..... *Wang Zhen-Dong, Liang Bian, Liu Zhong-Bo, Fan Xi-Jun*(7049)
- 4265 Bandwidth in quasi-phase-matched frequency doubling .....  
..... *Ren Ai-Hong, Liu Zheng-Ying, Zhang Rong-Zhu, Liu Jing-Lun, Sun Nian-Chun*(7054)
- 4265 Two-photon absorption coefficient spectra of indirect transitions in silicon .....  
..... *Cui Hao-Yang, Li Zhi-Feng, Ma Fa-Jun, Chen Xiao-Shuang, Lu Wei*(7059)
- 4270Q Polarization-independent self-collimation bends and beam splitters in  $3^2, 4, 3, 4$  Archimedean photonic crystals .....  
..... *Zhong Qi, Han Kui, Shen Xiao-Peng, Tong Xing, Wu Qiong-Hua, Li Ming-Xue, Wu Yu-Xi*(7065)
- 4270Q Wave localization in one-dimensional periodic-on-average disordered system composed of single-negative metamaterials .....  
..... *Liu Dong-Mei, Han Peng*(7072)
- 4270Q Fabrication and luminescence characterization of two-dimensional GaAs-based photonic crystal nanocavities .....  
..... *Peng Yin-Sheng, Ye Xiao-Ling, Xu Bo, Niu Jie-Bin, Jia Rui, Wang Zhan-Guo, Liang Song, Yang Xiao-Hong*(7077)
- 4272 Reflectivity uncertainty analysis of planar mirror calibration in BSRF .....  
..... *Chen Bo-Lun, Yang Zheng-Hua, Cao Zhu-Rong, Dong Jian-Jun, Hou Li-Fei, Cui Yan-Li, Jiang Shao-En, Yi Rong-Qing, Li San-Wei, Liu Shen-ye, Yang Jia-Min*(7085)
- 4280L A fiber decorated by colloidal photonic crystal .....  
..... *Liu Qing, Wang Ming, Guo Wen-Hua, Yan Hai-Tao, Yu Ping*(7090)
- 4280M Numerical and experimental study on coherent combining of double cladding multi-core photonic crystal fiber .....  
..... *Han Wei-Tao, Hou Lan-Tian, Geng Peng-Cheng*(7095)
- 4280Q Properties of photon counting imaging system with Si thin films .....  
..... *Zhao Fei-Fei, Liu Yong-An, Hu Hui-Jun, Zhao Bao-Sheng*(7104)
- 4281W Approaching 100 nJ pulse energy output from a mode-locked photonic crystal fiber laser .....  
..... *Song You-Jian, Hu Ming-Lie, Xie Chen, Chai Lu, Wang Qing-Yue*(7110)
- 4320 Structural damage imaging based on time-reversal theory for focusing of Lamb waves .....  
..... *Zhang Hai-Yan, Sun Xiu-Li, Cao Ya-Ping, Chen Xian-Hua, Yu Jian-Bo*(7119)
- 4410 Two-dimensional numerical simulation of laser-ablation of aluminum material by nanosecond laser pulse .....  
..... *Zhang Peng-Bo, Qin Ying, Zhao Ji-Jun, Wen Bin*(7128)
- 4410 Hamilton's principle based on thermomass theory .....  
..... *Song Bai, Wu Jing, Guo Zeng-Yuan*(7134)
- 4610 A symmetric product of two optimal third-order force gradient symplectic algorithms .....  
..... *Li Rong, Wu Xin*(7143)



- 4660H Electrical conduction mechanism in polar molecule dominated electrorheological fluid .....  
 ..... *Wang Xue-Zhao, Shen Rong, Lu Yang, Ji Ai-Ling, Sun Gang, Lu Kun-Quan, Cui Ping*(7148)
- 4735 The theory of nonlinear interfacial-internal wave propagation in three-layer fluid systems  
 ..... *Wen Wen-Ying, Chen Xiao-Gang, Song Jin-Bao*(7157)
- 5000 FLUIDS, PLASMAS AND ELECTRIC DISCHARGES**
- 5110 Prediction of transport properties of O<sub>2</sub>-CO<sub>2</sub> mixtures based on the inversion method .....  
 ..... *Wang Xiao-Po, Song Bo, Wu Jiang-Tao, Liu Zhi-Gang*(7163)
- 5220 Electrostatic oscillation and coupling resonance in double trap of unbalanced magnetron sputtering ...  
 ..... *Mu Zong-Xin, Mu Xiao-Dong, Jia Li, Wang Chun, Dong Chuang*(7169)
- 5225 Plasma convergence time of radiation hohlraum with single-ended driven on SG-III prototype laser facility  
 ..... *Cao Zhu-Rong, Li San-Wei, Jiang Shao-En, Ding Yong-Kun, Liu Shen-ye,  
 Yang Jia-Min, Zhang Hai-Ying, Yang Zheng-Hua, Li Hang, Yi Rong-Qing, He Xiao-An*(7174)
- 5225 Runaway electrons behaviors during ion cyclotron range of frequency and lower hybrid wave plasmas in  
 the HT-7 Tokamak ..... *Lu Hong-Wei,  
 Hu Li-Qun, Zhou Rui-Jie, Xu Ping, Zhong Guo-Qian, Lin Shi-Yao, Wang Shao-Feng*(7181)
- 5225F On the effect of magnetic field intensity on the discharge characteristics of Hall thrusters .....  
 ..... *E Peng, Duan Ping, Jiang Bin-Hao, Liu Hui, Wei Li-Qiu, Xu Dian-Guo*(7190)
- 5240 Impact of injecting positions on penetration and deposition of supersonic molecular beam on Tokamak  
 ..... *Jiao Yi-Ming, Yao Liang-Hua,  
 Feng Bei-Bin, Chen Cheng-Yuan, Zhou Yan, Shi Zong-Bing, Dong Jia-Qi, Duan Xu-Ru*(7197)
- 5250 Numerical simulation of femtosecond laser heating of metal films using electron thermal emission .....  
 ..... *Chen An-Min, Gao Xun, Jiang Yuan-Fei, Ding Da-Jun, Liu Hang, Jin Ming-Xing*(7202)
- 5265 Preionization of buffer chamber in ATON Hall thruster .....  
 ..... *Liu Hui, Wu Bo-Ying, E Peng, Duan Ping*(7208)
- 5270 Application of wavelet transform in the dynamic frequency spectrum analysis of magnetohydrodynamics  
 oscillations on HT-7 Tokamak ..... *Ma Tian-Peng, Hu Li-Qun, Chen Kai-Yun*(7213)
- 6000 CONDENSED MATTER: STRUCTURE, THERMAL AND MECHANICAL PROPERTIES**
- 6110M Growth and structure characterization of Cr<sup>4+</sup> doped Ca<sub>2</sub>GeO<sub>4</sub> laser crystal .....  
 ..... *Zhang Shan-Li, Zeng Fan-Ming,  
 Wang Xin-Tong, Li Chun, Wang Cheng-Wei, Zhang Ying, Lin Hai, Qin Jie-Ming, Liu Jing-He*(7218)
- 6110M Effects of In doping on crystal structure and thermoelectric properties of n-type skutterudites .....  
 ..... *Zhou Long, Li Han, Su Xian-Li, Tang Xin-Feng*(7224)
- 6120J Molecular dynamics simulation of temperature effects on CF<sub>3</sub><sup>+</sup> etching of Si surface .....  
 ..... *Ning Jian-Ping, Lü Xiao-Dan, Zhao Cheng-Li, Qin You-Min, He Ping-Ni, A. Bogaerts, Gou Fu-Jun*(7231)
- 6146 Synthesis and Characterization of Sb<sub>2</sub>Te<sub>3</sub> nanostructures .....  
 ..... *Zhang Fan, Zhu Hang-Tian, Luo Jun, Liang Jing-Kui, Rao Guang-Hui, Liu Quan-Lin*(7238)
- 6150C Design and fabrication of multilayer antireflection coating for optoelectronic devices by plasma enhanced  
 chemical vapor deposition .....  
 ..... *Yuan He, Sun Chang-Zheng, Xu Jian-Ming, Wu Qing, Xiong Bing, Luo Yi*(7244)
- 6150C Influence of doping on the crystallization ability of mono-component materials .....  
 ..... *Peng Kun, Ming Chen, Ye Xiang-Xi, Zhang Wen-Xian, Zhuang Jun, Ning Xi-Jing*(7251)
- 6170P Defect microstructures in polycrystalline pure copper induced by high-current pulsed electron beam—  
 the vacancy defect clusters and surface micropores ..... *Wang Xue-Tao,  
 Guan Qing-Feng, Qiu Dong-Hua, Cheng Xiu-Wei, Li Yan, Peng Dong-Jin, Gu Qian-Qian*(7257)
- 6185 Quasicontinuum simulation of crack propagation in nanocrystalline Ni .....  
 ..... *Shao Yu-Fei, Wang Shao-Qing*(7265)
- 6670 Heat conduction in one-dimensional Fibonacci chain with on-site potential .....

- ..... Xu Hui, Cui Mai-Ling, Ma Song-Shan(7270)
- 6810 On the equilibrium conditions for a spherical-cap liquid drop on a solid surface ..... Zhu Ru-Zeng, Yan Hong, Wang Xiao-Song(7277)
- 6810J First-principles study on chemisorption of Cl on  $\gamma$ -TiAl(111) surface ..... Wu Xiao-Xia, Wang Qian-En, Wang Fu-He, Zhou Yun-Song(7284)
- 7000 CONDENSED MATTER: ELECTRONIC STRUCTURE, ELECTRICAL, MAGNETIC, AND OPTICAL PROPERTIES**
- 7115A First-principles study of optical and electronic properties of N-doped SnO<sub>2</sub> ..... Yu Feng, Wang Pei-Ji, Zhang Chang-Wen(7290)
- 7115M Phonon band structure and electron-phonon interactions in Ga and Sb nanowires: a first-principles study ..... Sun Wei-Feng, Li Mei-Cheng, Zhao Lian-Cheng(7297)
- 7115Q Effect of molecular internuclear distance on non-sequential double ionization ..... Wei Ya-Na, Yang Shi-Ping(7305)
- 7170C Crystal field energy-levels of Nd<sup>3+</sup>:Gd<sub>3</sub>Sc<sub>2</sub>Al<sub>3</sub>O<sub>12</sub> and fitting ... Xiao Jin, Zhang Qing-Li, Zhou Wen-Long, Tan Xiao-Liang, Liu Wen-Pong, Yin Shao-Tang, Jiang Hai-He, Xia Shang-Da, Guo Chang-Xin(7313)
- 7215J Cryogenic thermoelectric properties of BiTe-based alloys and cryo-energy power generation ..... Jiang Ming-Bo, Wu Zhi-Xiong, Zhou Min, Huang Rong-Jin, Li Lai-Feng(7319)
- 7215Q Effect of spin polarization on ground state of Kondo system ..... Li Huan, Guo Wei(7326)
- 7250 Effect of temperature gradient on space charge waveform in pulsed electroacoustic method ..... Chen Xi, Wang Xia, Wu Kai, Peng Zong-Ren, Cheng Yong-Hong(7332)
- 7320D High temperature annealing of enhancement-mode AlGaN/GaN high-electron-mobility transistors ..... Wang Chong, Quan Si, Ma Xiao-Hua, Hao Yue, Zhang Jin-Cheng, Mao Wei(7337)
- 7360 Design and study of second-order Y-loop frequency selective surfaces ..... Gao Jin-Song, Wang Shan-Shan, Feng Xiao-Guo, Xu Nian-Xi, Zhao Jing-Li, Chen Hong(7343)
- 7510J Energy levels and magnetic moments of the quantum solitary wave in a one-dimensional ferromagnetic chain ..... Li De-Jun, Mi Xian-Wu, Deng Ke(7349)
- 7510J Orbital ordering driven spin dimer state in double-layered antiferromagnet K<sub>3</sub>Cu<sub>2</sub>O<sub>7</sub> ..... Chen Dong-Meng, Liu Da-Yong(7356)
- 7660E Training effect in the FM/AFM bilayers ..... Xu Mian, Pan Jing, Shen Ying, Hu Jing-Guo(7361)
- 7847 Physical origin of transient Kerr peak induced by circularly polarized laser in ferromagnetic films ..... Chen Da-Xin, Chen Zhi-Feng, Xu Chu-Dong, Lai Tian-Shu(7367)
- 7865 Design and thermodynamical analysis of a new refrigerator model driven by photovoltaic and thermoelectric power generation ..... Liu Yong-Sheng, Gu Min-An, Yang Jing-Jing, Shi Qi-Guang, Gao Tian, Yang Jin-Huan, Yang Zheng-Long(7373)
- 7870B Calculation of positron wave function in the single crystal solid ..... Xiong Tao, Zhang Jie, Chen Xiang-Lei, Ye Bang-Jiao, Du Huai-Jiang, Weng Hui-Min(7377)
- 8000 CROSS-DISCIPLINARY PHYSICS AND RELATED AREAS OF SCIENCE AND TECHNOLOGY**
- 8115H Influence of excitation frequency on the growth properties of nanocrystalline silicon films with high hydrogen dilution ..... Song Jie, Guo Yan-Qing, Wang Xiang, Ding Hong-Lin, Huang Rui(7382)
- 8116 Preparation of nanoparticle carbonates emission materials ..... Wang Qi-Fu, Wang Xiao-Xia, Luo Ji-Run, Zhao Qing-Lan(7389)
- 8120E Magnetically correlated *I-V* nonlinearity and electrical transport property of the double-layered perovskite La<sub>1-x</sub>Ca<sub>1-x/2</sub>Mn<sub>2</sub>O<sub>7</sub> compound ..... Deng Heng, Yang Chang-Ping, Huang Chang, Xu Ling-Fang(7395)
- 8120L Impedance analysis of BaFe<sub>0.4</sub>Sn<sub>0.6</sub>O<sub>3</sub>/BaBiO<sub>3</sub> composite negative temperature coefficient ceramics ... Yuan Chang-Lai, Liu Xin-Yu, Yang Yun, Xu Ji-Wen, Gu Yan(7403)
- 8120S A knotted polymer chain passing through a pore ..... Wen Xiao-Hui, Zhang Lin-Xi(7409)
- 8120V Influence of annealing on the microstructure and electrochemical properties of B-doped nanocrystalline

- diamond films ..... *Pan Jin-Ping, Hu Xiao-Jun, Lu Li-Ping, Yin Chi*(7416)
- 8130 Dendritic growth in forced flow using the phase-field simulation .....  
..... *Zhu Chang-Sheng, Wang Jun-Wei, Wang Zhi-Ping, Feng Li*(7423)
- 8130 Directional growth of monotectic alloy with and without shear flow .....  
..... *Wang Jian-Yuan, Chen Chang-Le, Zhai Wei, Jin Ke-Xin*(7430)
- 8130F Effect of low diffusion coefficient on glass phase formation in Pd<sub>77</sub>Cu<sub>6</sub>Si<sub>17</sub> alloy .....  
..... *Wang Zhen-Zhong, Wang Nan, Yao Wen-Jing*(7436)
- 8160C Performance of SnO<sub>2</sub>:F/SnO<sub>2</sub> composite films as front-electrode for CdTe solar cells .....  
..... *Zeng Guang-Gen,*  
..... *Li Bing, Zheng Jia-Gui, Wu Li-Li, Zhang Jing-Quan, Lei Zhi, Li Wei, Feng Liang-Huan*(7441)
- 8270R Comparative study on fractal model and spherical model of fire smoke particles for light scattering ...  
..... *Zhang Qing, Deng Xiao-Jiu, Zhang Qi-Xing, Li Yao-Dong, Zhang Yong-Ming*(7446)
- 8280T Model of the relationship between properties and phase composition of zirconia solid electrolyte .....  
..... *Hu Yong-Gang, Xiao Jian-Zhong, Xia Feng, Wu Xi-Wang, Yan Shuang-Zhi*(7451)
- 8640K Spatial configurations and x ray absorption of Ti catalyzing on NaAlH<sub>4</sub> surfaces; Car-Parrinello molecular  
dynamics and density functional theory study .....  
..... *Zhou Jing-Jing, Chen Yun-Gui, Wu Chao-Ling, Xiao Yan, Gao Tao*(7457)
- 8715 Base pairs composition, on-site energies of electrode and DNA-metal coupling effects on current-voltage  
characteristic of DNA molecule ..... *Ma Song-Shan, Zhu Jia, Xu Hui, Guo Rui*(7462)
- 8760I Phantom study of the classification of liver fibrosis based on nuclear magnetic resonance elasto-graphy  
..... *Wang Hong-Zhi, Xu Ling-Feng, Yu Jie, Huang Qing-Ming, Wang Xiao-Yan,*  
..... *Lu Lun, Wang He, Huang Yong, Cheng Hong-Yan, Zhang Xue-Long, Li Geng-Ying*(7471)
- 9000 GEOPHYSICS, ASTRONOMY AND ASTROPHYSICS**
- 9160F Compression properties of rare gases in region of ionization .....  
..... *Zheng Jun, Gu Yun-Jun, Chen Qi-Feng, Chen Zhi-Yun*(7477)
- 9260Q New GMF + RAIN model based on rain rate and application in typhoon wind retrieval .....  
..... *Zhang Liang, Huang Si-Xun, Zhong Jian, Du Hua-Dong*(7490)
- 9260X Long-range correlation and group-occurrence of return intervals of extreme events .....  
..... *Wang Qi-Guang, Hou Wei, Zheng Zhi-Hai, Feng Ai-Xia, Deng Bei-Sheng*(7497)
- 9260X Distribution of most probable temperature of daily average temperature records in China and the slowing  
down of warming trend ..... *Qian Zhong-Hua, Feng Guo-Lin, Gong Zhi-Qiang*(7507)
- 9580D A parallel immune genetic algorithm in adaptive resource allocation for cognitive radio network .....  
..... *Zhou Jie, Zu Yun-Xiao*(7515)
- 9870J Optical variability periodicity analysis of BL Lac object S5 0716 + 714 based on bispectrum estimation  
..... *Tang Jie, Zhang Xiong*(7522)
- 9870V Modeling of infrared characteristics of deep space target .....  
..... *Sun Cheng-Ming, Yuan Yan, Zhang Xiu-Bao*(7530)