

### 课题3 发表论文、获得专利、会议报告、人才培养统计

#### 发表论文:

1. Lyu Pengfei, Wang Yi. Development and performance of self-sealed MRPC. JINST 2017,12, C03055.
2. S. He, Q. Huang, H. Qiao, D. Wang, Y. Ban, Simulation Study of the Performance of New Micro Pattern Gaseous Detectors, Radiation Detection Technology and Methods (2018) 2: 21
3. Pengfei Lyu, Dong Han, Yi Wang, et al. Performance study of a real-size mosaic high-rate MRPC. 2018 JInst. 13 P06016
4. Fuyue Wang, Ultimate position resolution of pixel clusters with binary readout for particle tracking, NIMA 899(2018) 10-15
5. M. Tytgat et al. (CMS Collaboration), Quality control for the first large areas of triple-GEM chambers for the CMS endcaps,. EPJ Web Conf. 174 (2018) 03003
6. Qiunan Zhang, Dong Han, Yi Wang . Performance of high rate MRPC with different gas mixtures. 2019\_JINST\_14\_P01003
7. 王义, 张秋楠等. 多气隙电阻板室飞行时间谱仪技术. 物理学报 Acta Phys. Sin. Vol. 68, No. 10 (2019) 1029
8. X.L. Chen Yi Wang et al . The performance study of MRPCs used for muon tomography. 2019 JINST 14 C06012
9. Y. Wang et al. Status of technology of MRPC time of flight system. 2019 JINST 14 C06015
10. Pengfei Lyu, Dong Han, Yi Wang. Study on cosmic test and QC method of high-rate MRPC for CBM-TOF. 2019\_JINST\_14\_C09032
11. Yancheng Yu, Dong Han, Yi Wang. R&D of a real-size mosaic MRPC within the framework of the CMS muon upgrade. 2019\_JINST\_14\_C10042
12. D. Abbaneo et.al., (CMS Muon group), Layout and Assembly Technique of the GEM Chambers for the Upgrade of the CMS First Muon Endcap Station, CMS Muon Collaboration, Nucl.Instrum.Meth. A918 (2019) 67-75
13. 王珂, 薛志华, 王大勇, 班勇, 应用于气体电子倍增器的电子学板的研制, 《原子能科学技术》第54卷第6期, 2020年6月
14. Fuyue Wang, Dong Han, Yi Wang, et al. The study of a new time reconstruction method for MRPC read out by waveform digitizer, NIMA 954 (2020) 161224

15. Botan Wang, Han dong, Yi Wang, The CEE-eTOF wall constructed with new sealed MRPC. 2020 J. Inst. 15 C08022
16. Wang Fuyue, Han Dong, Wang Yi. Improving the time resolution of the MRPC detector using deep-learning algorithms. 2020 JINST 15 C09033
17. Yancheng Yu, Dong Han, Yi Wang. Study of high time resolution MRPC with the waveform digitizer system. 2020 JINST 15 C01049
18. Yancheng Yu, Xiaolong Chen, Yi Wang. A neural network based algorithm for MRPC position Reconstruction. 2020 JINST 15 C10022
19. Xiaolong Chen, Yi Wang. Development of Sealed MRPC with extremely low gas flow for muon tomography. 2020 JINST 15 C03012
20. Botan Wang, Dong Han, Yi Wang. Study on the coupled readout MRPC and eco working gas by a cosmic test system. 2020 JINST 15 C04013
21. M.Abbas et.al., (CMS Muon group), Performance of prototype GE1 / 1 chambers for the CMS muon spectrometer upgrade, Nucl.Instrum.Meth. A972(2020)164104
22. M.Abbas et.al., (CMS Muon group), Triple-GEM discharge probability studies at CHARM: simulations and experimental results, JINST 15(2020)10, P10013

### 获得专利:

1. 一种用于气体组性板探测器的流气盒, 申请日: 2017.11.20, 授权日: 2018.7.3, 专利号: ZL201721553050.8
2. 一种高计数率多气隙阻性板探测器, 申请日: 2017.11.20, 授权日: 2018.7.3, 专利号: ZL201721598761.7
3. 多气隙电阻板室探测器。申请日: 2015.7.8, 授权日: 2018.8.28, 发明专利号: ZL201510399044.0

### 会议报告:

1. 何少坤, 微结构气体探测器 (GEM、FTM) 性能模拟研究, 第七届全国先进气体探测器研讨会, 2017年11月10-13日, 广西南宁。
2. Andrew Levin, Calibration and Quality Control of the CMS Triple-GEM Detectors, 4<sup>th</sup> China LHC Physics Workshop, Dec. 18-22, 2018, Wuhan,Hubei.
3. Ming Zeng, Design of the LHCb Sci-Fi tracker read-out electronics and the QA system, 4<sup>th</sup> China LHC Physics Workshop, Dec. 18-22, 2018, Wuhan,Hubei.
4. Li Xu, The test of the SciFi Tracker electronics for LHCb upgrade, 4<sup>th</sup> China LHC

Physics Workshop, Dec. 18-22, 2018, Wuhan, Hubei.

5. 梁子寒, CMS-GEM探测器的批量生产和质量控制, 第八届全国先进气体探测器研讨会, 2018年10月12-14日,
6. Ke Wang, Design and prototyping of CMS-GEM electronics boards for 2<sup>nd</sup> endcap station, 5<sup>th</sup> China LHC Physics Workshop, October 24-27, 2019, Dalian, Liaoning.
7. Ming Zeng, Scintillator fibre trackers of the LHCb Upgrade I, 5<sup>th</sup> China LHC Physics Workshop, October 24-27, 2019, Dalian, Liaoning.
8. 王珂, The design and prototyping of CMS GE21 GEM Electronic Board, 第九届全国先进气体探测器研讨会, 2019年10月17-19日, 广东东莞。
9. A. Levin, Test of first endcap CMS-GEM super-chambers at CERN, 6<sup>th</sup> China LHC Physics Workshop, November 6-9, 2020, Tsinghua University (Online meeting)
10. Zhe Li, Development of the front-end electronic board for CMS-GEM detector, 6<sup>th</sup> China LHC Physics Workshop, November 6-9, 2020, Tsinghua University (Online meeting)
11. Yue Wang, Simulation Study of quadruple-foils GEM detector, 6<sup>th</sup> China LHC Physics Workshop, November 6-9, 2020, Tsinghua University (Online meeting)

### 培养博士 4 人、硕士 3 人:

姓名	导师	论文题目	毕业时间
何少坤 (硕士)	班勇 (北京大学)	新型微结构气体探测器性能模拟研究及 GE1/1 探测器生产 QC 工艺	2018.6
陈耿 (博士)	班勇 (北京大学)	CMS 实验上 $B^+ \rightarrow K^+ \mu^+ \mu^-$ 稀有衰变角分析与 GE1/1 探测器升级	2018.6
吕鹏飞 (博士)	李元景 (清华大学)	CBM 实验高计数率 MRPC 探测器的研制与应用研究	2019.6
王珂 (硕士)	王大勇 (北京大学)	CMS 实验 GEM 电子学板的设计与测试	2020.6
王扶月 (博士)	王义 (清华大学)	SoLID 高时间分辨率 MRPC 探测器关键技术研究	2020.6
俞彦成 (博士)	王义 (清华大学)	高计数率 20ps 时间分辨 MRPC 探测器原型机的研究	2021.6
王玥 (硕士)	班勇 (北京大学)	微结构气体探测器 Quadruple-GEM 性能的模拟研究	2021.6