

<b>Wednesday, 08 November 2017</b> 2017年11月8日, 星期三	
08:00--09:00	Registration 参会注册
Session Host: Dr.Yuanli Kang, BASTRIC, China 主持人: 康元丽博士, 中国商用飞机有限责任公司北京民用飞机技术研究中心, 中国	
09:00—09:15	Chair's welcome speech and introduction. Dr.Yuanli Kang, Director of More Electric System Department, Deputy Chief Integration Engineer, Beijing Aeronautical Science & Technology Research Institute of COMAC (BASTRIC), China 主席致欢迎词及介绍来宾。康元丽博士, 多电综合研究部负责人, 系统工程二级副总师, 中国商用飞机有限责任公司北京民用飞机技术研究中心, 中国
09:15—09:30	Welcome speech by the representative from COMAC, China 中国商用飞机有限责任公司领导致辞
09:30—09:45	Welcome speech by Mr. Joseph Du, China Country Manager, The Institution of Engineering and Technology, UK 杜伟先生致欢迎词, IET 英国工程技术学会中国区总经理
09:45—10:00	Welcome speech by the representative from Tsinghua University, China 清华大学领导致欢迎词
10:00—10:30	Group photo & Refreshment & Poster Session 集体照, 茶歇及海报展示
Session Host: Mr. James Howe, International Business Manager 主持人: 郝斯文, 英国工程技术学会国际运营部高级经理	
10:30—11:00	Keynote speech from Dr.Yuanli Kang, Beijing Aeronautical Science & Technology Research Institute of COMAC (BASTRIC), China 康元丽博士主旨演讲, 中国商用飞机有限责任公司北京民用飞机技术研究中心 Title of speech: System Engineering and MEA Integration 系统工程在多电系统集成中的应用
11:00—11:30	Keynote speech from Professor Zongxia Jiao, Beihang University, China 焦宗夏教授主旨演讲, 北京航空航天大学 Title of speech: Architecture design and evaluation of more-electrical actuation system for large aircrafts 大型飞机多电作动系统体系设计与评估
11:30—12:00	Keynote speech from Professor Yongdong Li, Tsinghua University, China 李永东教授主旨演讲, 清华大学 Title of speech: The application of WGB in MEA technology 宽禁带半导体技术在多电飞机系统中的应用
12:00—12:30	Keynote speech from Dr.Amit Gupta, Rolls-Royce Singapore Pte. Ltd. 新加坡 Dr. Amit Gupta 博士主旨演讲, 罗而斯-罗伊斯公司 Title of speech: How More Electric Technology is Shaping Aero Engine Design 多电技术对航空发动机设计的影响
12:30—12:35	Host's remarks 主持人总结词
12:35—13:30	Lunch and Poster Session 午餐及海报展示

## Oral Presentation (13:30 – 16:30)

### 论文口头报告

**Session Host: Professor Lie Xu, Tsinghua University, China**  
许烈教授，清华大学

**0001 (13:30 – 13:45)**

FAULT DIAGNOSIS AND TOLERANT CONTROL FOR POWER CONVERTER IN SRM DRIVES.  
Nasir Ali, Qiang Gao, Cai Xu, Pavol Makys, Marek Stulrajter

**0003 (13:45 – 14:00)**

Permanent Magnet Synchronous Machine Starter/Generators based High-Voltage DC Parallel Electric Power System for the More Electric Aircraft  
F Liu, L Xu, Y Li

**0010 (14:00 – 14:15)**

Decoupling Control for Aircraft Brushless Wound-Rotor Synchronous Starter-Generator in the Starting Mode  
N Jiao, W Liu, T Meng, C Sun, Y Jiang

**0012 (14:15 – 14:30)**

Effective Measures for Improving Switching Performance of SiC JFET Bi-directional Switches  
LN Wang, JY Yang, XC Zhang, KO Olanrewaju

**0013 (14:30 – 14:45)**

Circulating current minimization of paralleled 400Hz three phase four legs inverter based on 3rd harmonics injection  
Yihan Chen, Haixiao Ma, Yan Zhou

**0016 (14:45 – 15:00)**

230VAC/28VDC High-Power-Density Power Supply for More Electric Aircraft Applications  
R Liu, L Xu, Y Kang, Y Hui, Y Li

**0019 (15:00 – 15:15)**

Thermal analysis of fault tolerant electrical machines for MEA applications  
V Madonna, P Giangrande, C Gerada, M Galea

**0020 (15:15 – 15:30)**

A Novel Space Vector Modulation Technique For Three Level NPC Converters Within Aircraft Starter Generator Systems  
Chen Li, Giovanni Lo Calzo, Serhiy Bozhko, Chris Gerada, Patrick Wheeler, Tao Yang

**0024 (15:30 – 15:45)**

An Initial Rotor Position Estimation Method for Aircraft Wound - rotor Synchronous Starter/generators  
S Mao, W Liu, P Ma, Z Zhang, Y Hu

**0031 (15:45 – 16:00)**

CONSIDERATION AND VALIDATION OF FLIGHT CONTROL REQUIREMENTS UNDER ALL ENGINE FAILURE CONDITIONS FOR MEA  
Xiyu Li, Shuhan Xu, Zhiqiang Bai

**0034 (16:00 – 16:15)**

Spectral Analysis of a SVPWM modulated Matrix Converter based on 3-D Fourier integral  
Lin Qiu, Lie Xu, Yongdong Li, Xiaoyan Huang, youtong Fang

**0035 (16:15 – 16:30)**

MODEL-BASED DESIGN OF A STARTING CONTROL SYSTEM WITH AN LC FILTER FOR AN AIRCRAFT START GENERATOR  
Li Hejie, Chen Zhihui, Li Jincai, Zhang Zhuoran

## Poster Display(09:00 – 16:30)

### 论文海报展示

**0002**

Research on Three-phase Four-leg Matrix Converter Based More Electric Aircraft Wing Ice Protection System  
Songtao Huang, Lie Xu, Yougui Guo, Yongdong Li, Wenlang Deng

**0004**

Hardware-in-the-Loop Real-time Platform for More Electric Airplane  
Meiqi Wang, Lie Xu, Kui Wang, Zedong Zheng, Yongdong Li, Chris Grada, He Zhang

**0006**

RESEARCH ON SPACE VECTOR MODULATION AND COMMONMODE VOLTAGE OF FOUR-LEG MATRIX CONVERTER  
Hanwei Xu, Lie Xu, Yongdong Li

**0007**

Common-Mode Voltage Reduction for Five-Level ANPC Converter by Phase-Shifted PWM Strategy  
F Liu, L Xu, K Wang, P Zhou, Y Li

**0008**

A LOW-COST POST POWER SWITCH OPEN-CIRCUIT FAULT OPERATION APPROACH FOR AN IPMSM DRIVE  
Wei Li, Shenxiexian Xuan, Qiang Gao, Xu Cai

**0009**

Rotor position estimation of wound-rotor synchronous starter/generator  
Zhu Yujie, Liu Weiguo, Meng Tao, Peng Jichang, Jiao Ningfei

**0011**

Research on Inter-turn Short Circuit of Armature Windings in the Multiphase Synchronous Generator-Rectifier System  
Y G Sun, S M Wang, Z G Huang, S J Mu

**0015**

A Novel Decoupled TAB Converter with Energy Storage System for HVDC Power System in More Electric Aircraft  
R Liu, L Xu, Y Kang, Y Hui, Y Li

**0017**

Rotor Position on-line Estimation of Aircraft Brushless Synchronous Motor based on Multi-Stage-structure Characteristics  
T Meng, W Liu, N Jiao, J Peng, Y Zhu

**0018**

A NOVEL ROTATING RECTIFIER FAULT DETECTION METHOD OF WOUND-ROTOR SYNCHRONOUS STARTER-GENERATOR WITH THREE-PHASE EXCITER  
W Zhihuang, L Weiguo, Z Zan, J Ningfei, P Jichang, M Tao

**0021**

Research on DC / DC phase-shifted full-bridge converter system identification  
Guangming Zhang

**0022**

Research on improved control method of electro-mechanical actuation  
Xiao Xi, Xiong Si, Wu Xia, Liu Dan

**0023**

Multi-Objective Optimal Design of Passive Power Filter for Aircraft Starter/Generator System Application  
D Zhao, W Liu, K Shen, G Zhao, X Wang

**0025**

NEW METHOD FOR MEASURING TORQUE RIPPLE OF THE STARTER GENERATOR  
Wu Z.Y., Kang Y.L., Guo H.

<p>Thursday, 09 November 2017 2017年11月9日, 星期四</p>	
<p>Session Host: Mr. Guosheng Wang, Vice Director Eng. Research Fellow Dept. of More Electric Systems, BASTRIC</p> <p>主持人: 王国胜, 多电综合研究部 副主任工程师, 中国商用飞机有限责任公司北京民用飞机技术研究中心, 中国</p>	
09:30—10:00	<p>Keynote speech from Mr. Bob Bayles - Senior Fellow – Electric, Environmental &amp; Engine Systems, UTC Aerospace systems</p> <p>Bob Bayles 先生主旨演讲, 汉胜公司</p> <p>Title of speech: Integration of More Electric Airplanes</p> <p>多电飞机集成技术</p>
10:00—10:30	<p>Keynote speech from Mr. Martin Broadhurst BE MA C.DIR F.RAeS F.IOD, Royal Aeronautical Society</p> <p>Martin Broadhurst 先生主旨演讲, 英国皇家航空学会</p> <p>Title of speech: Flying All-Electric – Aircraft of the Future</p> <p>未来飞机-飞行全电动</p>
10:30—11:00	<p>Keynote speaker from Professor Chris Gerada, Nottingham University, UK</p> <p>Chris Gerada 教授主旨演讲, 英国诺丁汉大学</p> <p>Title of speech: High Performance Electrical Machines and Drives for Aircraft Application</p> <p>多电飞机高性能电机及其驱动控制</p>
11:00—11:30	<p>Keynote speech from Professor Zhuoran Zhang, Nanjing University of Aeronautics and Astronautics, China</p> <p>张卓然教授主旨演讲, 南京航空航天大学, 中国</p> <p>Title of speech: Development of New Hybrid Excitation Starter-generators for More Electric Aircraft</p> <p>多电飞机新型混合励磁起动发电机研究</p>
<p><b>11:30—12:30 Technical Visit 技术参观</b></p> <p><b>Research centre at Beijing Aeronautical Science &amp; Technology Research Institute of COMAC (BASTRIC), China</b></p> <p>中国商用飞机有限责任公司北京民用飞机技术研究中心</p>	
12:30—13:30	<p>Lunch and Poster Session</p> <p>午餐及海报展示</p>
<p><b>Oral Presentation(13:30—16:30)</b></p> <p><b>论文口头报告</b></p>	
<p><b>Session Host: Professor Lie Xu, Tsinghua University, China</b></p> <p>许烈教授, 清华大学</p>	
<p><b>0065 (13:30 – 13:45)</b></p> <p>OVERVIEW OF MEA KEY TECHNOLOGY AND SYSTEM INTEGRATION</p> <p>Kang Yuanli, Hui Yannian</p>	
<p><b>0037 (13:45 – 14:00)</b></p> <p>A Novel Silicon Carbon based PWM Rectifier Simulator with Grid-connected Inverter for More Electric Aircraft</p> <p>Yue MA, Yuanli Kang, Lie Xu, Kui Wang, Tongdong Li</p>	
<p><b>0038 (14:00 – 14:15)</b></p> <p>Design and verification of thermal load for electrothermal ice protection system</p> <p>Li Peng, Kang Yuanli, Song Yupeng, He Xunan</p>	
<p><b>0039 (14:15 – 14:30)</b></p> <p>Design and Operating Mode Analysis of Hybrid Actuation System Based on EHA/SHA</p> <p>Zidong Liu, Zhiqiang Bai, Shuhan Xu</p>	

**0040 (14:30 – 14:45)**

Comparative Stability and Sensitivity Analysis of Disturbance-Observer-based Disturbance Attenuation Methods in More Electric Aircraft DC Power System

Yue MA, Lie Xu, Xuan Zhang, Yongdong Li, Kui Wang, Zedong Zheng

**0049 (14:45 – 15:00)**

Model predictive control for reduced matrix converter with transformer DC magnetic bias suppression

W Z Song, J Liu, D Q Gao, F J Wu, Y Y Wang

**0056 (15:00 – 15:15)**

A Hybrid Method to Control Neutral-point Voltage Fluctuation for a Hybrid VIENNA rectifier

Wei-zhang Song, Nan Xie, You-yun Wang, Zhi-hao Dai, Jia Yan

**0051 (15:15 – 15:30)**

Phase-Shift Full Bridge Power Supply Based on SiC Devices

Guobing Liu, Kui Wang, Cangqi Qu, Shaogang Liu, Qi Jia, Yongdong LI

**0052 (15:30 – 15:45)**

Vector control implementation in FPGA for 200kHz GaN-based motor drive systems

Z Luo, Y Li, X Zhang, K Wang

**0058 (15:45 – 16:00)**

THE FAULT DIAGNOSIS USING PARTICLE FILTER FOR MEA TYPICAL COMPONENTS

Li Hongliang, Hui Yannian, Qu Jianglei, Sun Haocheng

**0062 (16:00 – 16:15)**

Assessment of Torque Ripple Minimization Techniques for Aircraft Switched Reluctance Machine Starter/Generator

Xiaofeng Ding, Mohamed Rashed, Christopher Hill, Serhiy Bozhko

**0067 (16:15 – 16:30)**

CONTROL AND OPTIMIZATION OF HYBRID ELECTRIC PROPULSION SYSTEM FOR LIGHT AIRCRAFT

Al Savvaris, Ye Xie, Letian Wang, Antonios Tsourdos

**Poster Display(09:00 – 16:30)****论文海报展示****0026**

BEHAVIOURAL MODELLING AND POWER QUALITY SIMULATION OF A HVDC ELECTRIC POWER SYSTEM FOR MEA

Y Wang, Y Hui, Y Kang

**0027**

ANALYSIS OF THE COUPLING EFFECTS ON MAIN FEEDER IN MEA

Lu Zhang

**0028**

METHODS FOR BUILDING ATRU REAL-TIME MODEL BASED ON DIFFERENT APPLICATION SCENARIOS

Haocheng Sun, Yuanli Kang, Yannian Hui, Yue Wang

**0029**

RESEARCH ON THE MODULATION AND CONTROL OF MULTILEVEL MATRIX CONVERTER

Qu Jianglei, Xu Lie, Wang Lina, Hui Yannian

**0030**

RESEARCH ON THE MODULATION OF A THREE-LEVEL MATRIX CONVERTER WITH REDUCED COMMON MODE VOLTAGE

Qu Jianglei, Xu Lie, Wang Lina, Hui Yannian

**0032**

The Control Strategy for Dual Three-phase PMSM Based on the Reduced Order Mathematical Model Under Fault Condition Due to Open Phases

Changpan Zhou, Wei Tang, Zhaoji Zhou, Guijie Yang, Jianyong Su, Xiangdong Sun

**0036**

POLE RATIO AND OPERATION MODE INFLUENCE ON THE EXCITATION SYSTEM OF THREE - STAGE SYNCHRONOUS STARTER/GENERATOR

C H Sun, W G Liu, Z Zhang, N F Jiao, J Pang, D Li

**0041**

Transient Simulation and Analysis of Wing Electrothermal Ice Protection System

Li PENG, KANG YUANLI, Song Yupeng, He Xunan

**0047**

Design of High performance bidirectional dc/dc converter applied for more electric-electric-aircraft

Bo Liu, Maohang Qiu, Lei Jing, Xiaoqing Wang, Min Chen

**0048**

FINITE STATE MACHINE CONTROL FOR AIRCRAFT ELECTRICAL DISTRIBUTION SYSTEM

Cosimo Spagnolo, Sharmila Sumsurooah, Christopher Ian Hill, Serhiy Bozhko

**0057**

Matrix converter induction motor vector control based on fuzzy speed and current controllers

Zhongguan Wang, Yougui Guo, Xiao Wang, Wenlang Deng

**0060**

Flight Control System Network Architecture Design and Simulation Based on Time-Triggered Protocol

Zhiqiang Bai, Shaomin Chen, Yupeng Song, Zidong Liu

**0061**

THE STATE OF ART AND SOME CONSIDERATIONS ON THERMAL LOAD ANALYSIS AND THERMAL MANAGEMENT FOR HYDRAULIC SYSTEM IN MEA

Dong Li, Sujun Dong, Jun Wang, Yunhua Li

**0064**

A SPEED-SENSORLESS DIRECT TORQUE CONTROL SCHEME FOR MATRIX CONVERTER DRIVEN INDUCTION MOTOR

Yougui Guo