吴军博士导师简介

一、 个人基本信息

出生日期：1986 年 12 月

籍贯： 山西省

性 别：男

民 族：汉

职称：教授

最高学历：博士研究生

导师类型：硕士生导师（080200【机械工程】、085501【机械工程】、081100【控制科学与工程】、085400【电子信息】、085406【控制工程】），博士生导师（082300【交通运输工程】）

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二、 学习和工作经历简介

●2005.09-2009.06：天津大学 测控技术与仪器 本科

●2009.09-2014.06：天津大学 仪器科学与技术 博士

●2014.07-2018.12：中国民航大学 航空工程学院 讲师

●2019.01-2023.12：中国民航大学 航空工程学院 副教授

●2024.01-至今：中国民航大学 航空工程学院 教授

三、 学术兼职

●天津大学精密测试技术及仪器国家重点实验室客座研究员

●中国航空学会可靠性工程分会青年委员

●中国计量测试学会在线监测技术及智能制造专业委员会委员

四、 社会兼职

●无

五、 荣誉称号

●2016 年天津市“131”创新型人才培养工程第三层次人选

●2017 年中国民航大学青年骨干教师人选

●2020 年中国民航大学蓝天青年学者人选

六、 主要研究方向和科研业绩

●主要研究方向包括：

[1]基于定量纹影成像技术的航空发动机尾喷流场、温度场同步检测方法

[2]基于智能 AGV 平台的飞机拖动过程碰撞风险检测方法

[3]基于深度学习的飞机蒙皮损伤智能检测方法

●科研业绩：

1.基于激光诱导及散斑图像处理的航空发动机尾气粒子流场监测关键技术研究，国家自然科学基金与民航联合基金，国家级，23 万，2016 年-2018 年，主持(U1533111)

2.基于光场纹影法的高温高速流场空间三维温度场测量方法，国家自然科学基金青年基金，国家级，24 万，2021 年-2023 年，主持(52005500)

3.基于纹影定量测量的燃烧室多尺度湍流三维结构动态测量方法，国家自然科学基金面上项目，50 万，2024.01-2027.12，主持，(52375557)

4.基于定量光场纹影法的航空发动机燃烧室出口温度场精确测量方法，天津市自然科学基金多元投入面上项目，10 万，2024.10-2027.9，主持，(24JCYBJC00160)

5.基于智能 AGV 平台的飞机拖动安全距离精确检测系统，中央高校基本科研业务费中国民航大学培育专项，40 万，2023.05-2025.04，主持（3122023PY06）

●获奖：

[1]齿轮-轮系教学综合演示实验台，中国高等教育学会，全国高等学校教师自制实验教学仪器设备创新大赛三等奖，2018-10（排名 1）

[2]基于 OBE 理念及自制实验教学设备重构机电类课程实验教学体系的探索与实践，中国民航大学，教学成果二等奖，2021-10 （排名 1）

[3]机电控制一体化教学团队，中国民航大学优秀教学团队，2021-06（排名 1）

[4]基于物理先验感知的智能监测与制造及产业化应用，天津市科技进步二等奖，2024-02（排名 4）

[5]民用飞机预测性维修关键技术及应用，自动化学会科技进步二等奖，2024-12（排名 5）

[6]民机典型部件剩余寿命和健康管理关键技术及应用，天津市科技进步二等奖，2025-01（排名 7）

[7]民机辅助动力装置尾喷流场参数纹影定量测试关键技术及应用，仪器仪表学会科技进步二等奖，2025-08（排名 1）

七、 论著目录

●学术论文：

[1]Wu Jun，Zhu Jigui，Yang Linghui*，Shen Mengting，Xue Bin，Liu Zhexu， A highly accurate ultrasonic ranging method based on onset extraction and phase shift detection， Measurement， 2014，（47）：433-441.（SCI：000328196600051）

[2]Wu Jun，Zhu Jigui，Yang Linghui*，Shen Mengting，Xue Bin，Liu Zhexu，A novel ultrasonic ranging method used for single station indoor GPS，Transaction of the Institute of Measurement and Control，2015，37（1）：25-32.（SCI：000346645400003）

[3]Wu Jun*，Yu Zhijing，Zhuge Jingchang，Self-calibration method for rotating laser positioning system using interscanning technology and

ultrasonic ranging，Journal of the Optical Society of America A: Optics and Image Science, and Vision，2016，33（4）：544-550．（SCI：000373398300015）

[4]Wu Jun*，Zhu Jigui，Yu Zhijing，Zhuge Jingchang，Three-dimensional temperature field compensation technology for large-scale ultrasonic positioning system，Transactions of the Institute of Measurement and Control，2017，39(12)：1841-1850（SCI）

[5]Wu Jun*, Zhu Jigui, Yu Zhijing, Zhuge Jingchang, Xue Bin, A total station spatial positioning method based on rotary laser scanning and ultrasonic ranging, Review of Scientific Instruments, 2016, (87), 115104. (SCI)

[6]Wu Jun, Yu Zhijing, Wang Tao, Zhuge Jingchang, Ji Yue*, Xue Bin, Airplane wing deformation and flight flutter detection method by using three-dimensional speckle image correlation technology, Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2017, 34(6), 924-930.

[7]Yu Zhijing, Ma Kai, Wang Zhijun, Wu Jun*, Wang Tao, Zhuge Jingchang, Surface modeling method for aircraft engine blades by using speckle patterns based on the virtual stereo vision system, Optics Communications, 2018, 411,33-39.

[8]Ji Yue, Wu Jun*, Calibration method of light-field camera for photogrammetry application, Measurement, 2019, 148, 106943-1-7.

[9]Wu Jun, Li Xin, Xu Haitao, Xu Jun, Yu Zhijing*, Image distortion correction method in a nonuniform temperature field by using Runge-Kutta ray tracing, Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2019, 36(10), 1795-1800.

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[11]Wu Jun, Li Zhan, Zhang Jin, Wang ning, Wang Tao*, Wang Hao, Tang Jie, Adaptive Positioning Repair Method for Aero-Engine Blades by Using Speckle Vision Measurement, IEEE Access, 2020, 8(1), 73307-73319.

[12] Yue Ji, Yun Du, Guozhong Yan, Xingfei Li, Jun Wu*, Weixiao Tuo, Jinyi Li, Adaptive Kalman Filter Enhanced With Spectrum Analysis for Wide-Bandwidth Angular Velocity Estimation Fusion, IEEE Sensors Journal, 2020, 20(19), 11527-11536.

[13] Jun Wu, Yanling Li, Fengcheng Song, Yuheng Zhu, Zhijing Yu*, 3D non-axisymmetric temperature field measurement using rotating tomographic mechanism schlieren method, Measurement Science and Technology, 2021, 32, 125204.

[14] Wu Jun*, Song Fengcheng, Feng Chengbin, Yu Zhijing, Full space coordinate measurement method with a portable light pen by using hybrid light field imaging, Optics Express, 2021, 29(23), 37336-37353.

[15] Wu Jun, Pan Zhixiang, Zhang Chenping, Song Fengcheng*, Zhang Xiaoyu, Guo Runxia. A non-axisymmetric temperature field reconstruction method based on the interferometric fringe schlieren method[J]. Measurement Science and Technology, 2023, 34(4): 044005.

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Method Based on the Fan-Shaped Light Path Background Oriented Schlieren Method, IEEE Transactions on Instrumentation and Measurement, 2024, 73: 5008808

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2024, 35(10), 105203.

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●专利：

[1]吴军，于之靖，王志军,诸葛晶昌，一种航空发动机尾气粒子流场监测方法，专利号：201610283170.4，授权日：2018-02-27（已转化）

[2]吴军，王志军，马凯，于之靖，王涛，程彬彬，王科平，王嘉伟，一种航空发动机损伤叶片三维数字散斑造型方法，专利号：201611016718.5，授权日：2018-11-02

[3]诸葛晶昌，詹湘琳，吴军，张卫，一种红外多光谱残冰检测多幅成像环境差异消除装置，专利号：201610369840.4，授权日：2019-05-07

[4]吴军，徐鋆，冯成斌，徐海涛，李泽川，李鑫，李雁玲，宋丰成，采用激光多普勒频移的航空发动机叶尖间隙测量系统，专利号：201911182658.8，授权日：2021-2-5

[5]吴军，李鑫，李雁玲，王科平，一种基于蜂巢模型的飞机蒙皮小型损伤定位方法,专利号：201910300451.X，授权日：2021-08-13（已转化）

[6]吴军，李泽川，郭润夏，李鑫，李雁玲，徐鋆，一种全空间单目光笔式视觉测量方法[P]. 申请(专利)号：CN202010716079.3，申请日：2020-07-23，授权公布号： CN111862238B，授权日：2022-05-10.

[7]王涛，李战，吴军，王盛，乔伟林，张立峰，一种航空发动机叶片修复的自适应定位方法，申请号：201811561325.1，授权日：2022-12-30.

[8]吴军,李泽川,郭润夏,徐鋆,李雁玲,李鑫. 一种采用互拍法的多目相机外部方位参数标定方法[P]. 申请(专利)号：CN202010131077.8, 申请日:2020.2.28,天津市：CN111415391B,2023-04-28.

[9]卢帅员;李阔;桂烨涵;吴东泽;石改琴;吴军;李鑫. 一种基于无人机视

觉的飞机蒙皮损伤智能检测方法[P]. 申请日:2021.8.27, 申请(专利)号：CN202110995923.5，天津市：CN113744230A,2021-12-03，授权日：2023-09-05

[10]吴军;张美妙;郭润夏;李泽川;刘少禹;袁少博;祝玉恒.基于视觉与IMU融合的飞机蒙皮损伤无人机绕检定位方法[P].天津市:CN112712565A, 申请(专利)号：CN202011595863.X, 申请日2021-04-27，授权日：2024-03-01.