

Conference Arrangements

The 2nd International Basic Research Conference on Rotorcraft Technology
Nanjing, China, Nov. 7-9 2005

Sponsored by
The American Helicopter Society
Georgia Institute of Technology
Nanjing University of Aeronautics and Astronautics
The Chinese Society of Aeronautics and Astronautics



General Chairman: Prof. Haiyan Hu
Technical Program Chairman: Prof. Zheng Gao and Prof. Daniel P. Schrage
Arrangements Chairman: Prof. Pinqi Xia and Dr. Chee Tung

1. Location

The conference will be held at the Minggugong campus of Nanjing University of Aeronautics and Astronautics (NUAA). The conference participants will stay at the Nanjing Hilton International Hotel. A reservation of about 50 rooms in the Nanjing Hilton International Hotel has been already made and therefore, you do not need to make a reservation yourself. The discount room rate is US\$75 including a breakfast and 15% tax for every super room with a big bed or two standard beds per day. If a couple shares a room, there is an additional US\$10 charge per day. A room with a big bed or two standard beds is up to your own choice.

2. Transportation

Due to limited international flights at Nanjing Lukou International Airport, you need to make some connections before reaching Nanjing. You may choose one of the following routes to Nanjing:

- ① Your home airport → Beijing International Airport → Nanjing Lukou International Airport
- ② Your home airport → Hong Kong International Airport → Nanjing LuKou International Airport
- ③ Your home airport → Seoul International Airport → Nanjing Lukou International Airport

You will be collected at Nanjing Lukou International Airport to Nanjing Hilton

International Hotel on Nov. 5 and 6. You may also take a taxi at Nanjing Lukou International Airport to Nanjing Hilton International Hotel.

There are also alternative ways to Nanjing:

Your home airport → Shanghai Pudong International Airport → Nanjing by train or by Coach → Nanjing Hilton International Hotel in 15 minutes by taxi.

3. Registration Fee

The registration fee is US\$300 for every delegate, US\$200 for every student delegate covering the conference proceedings, coffee breaks, lunches, dinners, two banquets, city tour in Nanjing during the conference period. The registration fee will be paid by cash after you arrive at Nanjing Hilton International Hotel.

4. Activity Summary

Date	Time	Activity	Address
Nov. 6	18:30~19:30	Dinner	Nanjing Hilton Hotel
Nov. 7	7:30~8:30	Breakfast	Nanjing Hilton Hotel
	8:40	Take bus to conference room	Nanjing Hilton Hotel
	9:00~12:00	Conference	Rm 529, A18, NUAA
	12:00~14:00	Lunch	Tao Li Yuan dinner room
	14:00~17:40	Conference	Rm529, A18, NUAA
	17:50	Take bus to Hilton Hotel	Building 18, NUAA
	19:00	Banquet	Nanjing Hilton Hotel
Nov. 8	7:30~8:30	Breakfast	Nanjing Hilton Hotel
	8:40	Take bus to conference room	Nanjing Hilton Hotel
	9:00~12:00	Conference	Rm429,Rm431,Rm433 A18, NUAA
	12:00~14:00	Lunch	Tao Li Yuan dinner room
	14:00~17:40	Conference	Rm429,Rm431,Rm433 A18, NUAA
	17:50	Take bus to Confucius Temple	A18, NUAA
	19:00	Nanjing traditional food	Wan Qing Lou building
	21:00	Take bus to Hilton Hotel	Wan Qing Lou building
Nov. 9	7:30~8:30	Breakfast	Nanjing Hilton Hotel
	8:40	Take bus to conference room	Nanjing Hilton Hotel
	9:00~11:30	Conference	Rm429,Rm431,Rm433 A18, NUAA
	11:30~12:30	Visit Lab of Rotorcraft Aeromechanics	NUAA
	12:30	Take bus to east suburb	A18, NUAA
	13:00~14:30	Banquet and closing ceremony	International Conference Hotel of Nanjing
	14:30~18:00	City tour in Nanjing	Ming Xiaoling Mausoleum Sun Yat-sen's Mausoleum
	18:00	Dinner	International Conference Hotel of Nanjing

5. Conference Schedule

Monday, 7 November 2005		
9:00~9:45	Opening Ceremony Chairman: <i>Professor Quanyuan Jin</i> Room 529, A18, NUAА	
9:00~9:10	Welcome Speech	President and Prof. Haiyan Hu Nanjing University of Aeronautics and Astronautics
9:10~9:20	Conference Speech	Official American Helicopter Society
9:20~9:30	Conference Speech	Official Chinese Society for Aeronautics and Astronautics
9:30~9:50	The Georgia Tech Center of Excellence in Rotorcraft Technology - Celebrating over 20 years of Success	Prof. Daniel P. Schrage Georgia Institute of Technology
9:50~10:15	Take Photos	All Delegates
10:15~17:40	Invited Presentation Chairman: <i>Prof. Gao Zheng and Prof. Daniel P. Schrage</i> Room 529, A18, NUAА	
10:15~11:10	Future Research Direction of Rotorcraft Aerodynamics	Dr. Andy Kerr NASA Ames Research Center
11:10~12:00	Rotorcraft in the 21 st Centenary	Prof. Shicun Wang Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics
14:00~14:50	Development of Helicopter Technology of China	Dr. Xianping Ni Deputy Chief Engineer China Aviation Industry Corporation II
14:50~15:40	NASA Heavy Lift Rotorcraft Systems Investigation	Dr. Wayne Johnson NASA Ames Research Center
15:40~16:00	Coffee Break	
16:00~16:50	The Role of CFD in the Development of Rotorcraft Analyses	Dr. Francis X. Caradonna Army Aeroflightdynamics Directorate U.S. Army Aviation and Missile Research, Development & Engineering Center Moffett Field, USA
16:50~17:40	Recent Research in Lab of Rotorcraft Aeromechanics of NUAA	Prof. Zheng Gao Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China

Tuesday, 8 November 2005

Session 1: Aerodynamics and Performance
Chairman: Dr. Chee Tung and Dr. Wayland Y. F. Chan
Room 429, A18, NUAA

9:00~9:30	Applications of State-Space Wake Models to Full and Partial Ground Effect	Ke Yu and David A. Peters Department of Mechanical & Aerospace Engineering Washington University, Campus Box 1185, St. Louis, MO 63130-4899, USA
9:30~10:00	Model Test of Unmanned High-Speed Helicopter RD15 Scheme	Huanjin Wang and Zheng Gao Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
10:00~10:30	Unsteady Simulation of An Isolated Rotor With Oscillating Blades	Chunhua Sheng Computational Simulation and Design Center, Mississippi State University, Mississippi State, MS 3962, USA
10:30~10:50	Coffee Break	
10:50~11:20	A Parallel Unstructured Overset Mesh Technique for Unsteady Rotor Flow Simulations	Mun Seung Jung, Hwa Jin Nam and Oh Joon Kwon Korea Advanced Institute of Science and Technology, 373-1 Guseong-dong, Yuseong-gu, Daejeon 305-701, KOREA
11:20~11:50	Quantitative Analysis of Wake Distortion Effect Based on Experiments of an Isolated Maneuvering Rotor	Jin Xu and Zheng Gao Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
14:00~14:30	Modelling the Mean Flow Through a Rotor in Axial Flight Including Vortex Ring Conditions	Ian A Simons Rotorcraft Consultant, Crewkerne, England Wayland YF Chan QinetiQ, Farnborough, England F John Perry Rotorcraft Consultant, Yeovil, England Richard E Brown and Gary A Ahlin Department of Aeronautics, Imperial College, England
14:30~15:00	A Free-Vortex Wake Analysis for Tiltrotors in Steady and Transition Flights	Chunhua Li, Guohua Xu, and Shicun Wang Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
15:00~15:30	Numerical Investigation of the Effect of Slots on Rotor Blade Tip Vortex Formation	Youn Jung Park ,Oh Joon Kwon Korea Advance Institute of Science and Technology 373-1 Guseong-dong, Yuseong-gu, Daejeon 305-701, KOREA Yong Oun Han Yeungnam University,Gyongsan 712-749,KOREA
15:30~15:50	Coffee Break	
15:50~16:20	Numerical Simulation of Helicopter Rotor Flow through	Yihua Cao and Ziwen Yu Institute of Aircraft Design Beijing University

	Free Wake Analytical Technique and CFD Method	of Aeronautics and Astronautics, Beijing 100083, China
16:20~16:50	Experimental Set-up to Parallel Blade Vortex Interaction with Trailing Edge Flap at Low Speed	Kyung Hwan Baik, Duck Joo Lee Department of Mechanical Engineering Division of Aerospace Engineering Korea Advanced Institute of Science and Technology 373-1 Guseong-dong, Yuseong-gu, Daejeon 305-701, Republic of Korea
16:50~17:20	Aerodynamics and Acoustics of the Rotor With New Tip Shapes Based upon Numerical Simulations and Experiments	Qijun Zhao, Guohua Xu Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
<p>Session 2: Dynamics Chairman: Prof. Shoushen Liu and Dr. Jinsong Bao Room 431, A18, NUAA</p>		
9:00~9:30	An Efficient Tightly Coupled Fluid-Solid Interaction Approach for Modeling Rotors in Forward Flight	Sujeet Phanse, Lakshmi N. Sankar and Olivier Bauchau School of Aerospace Engineering Georgia Institute of Technology, Atlanta, GA 30332-0150
9:30~10:00	Adaptive Control of Structural Responses for Helicopter in time domain	Zhongquan Gu, Tiejun Yang, Linyun Lei and Mingyue Lu Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing, 210016, China
10:00~10:30	Rotor Load and Inflow Determination Technology	Shoushen Liu, Daniel P. Schrage Center of Excellence in Rotorcraft Technology School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA Jerry P. Higman US Army, Apache Attack Helicopter Program Management Office Huntsville, Alabama, USA
10:30~10:50	Coffee Break	
10:50~11:20	Recent Progress Towards Development of Swashplateless Rotor Systems	Jinsong Bao, Jaye Falls, Inderjit Chopra Alfred Gessow Rotorcraft Center, Department of Aerospace Engineering University of Maryland, College Park, MD 20742, USA
11:20~11:50	Analysis of Helicopter Ground Resonance with Fuselage State Feedback	Guocai Hu, Zhiqiang Hou Department of Aircraft Engineering, Naval Aeronautical Engineering Institute, Shandong, yantai, 264001, China
14:00~14:30	Decoupling of an H_∞ -controller in Observer Form for Helicopter Vibration Reduction	Daniel Y. Reber, Wassef Ayadi Institute of Flight Mechanics and Control, University of Stuttgart Pfaffenwaldring 7a, 70569 Stuttgart, Germany
14:30~15:00	Control of Helicopter Ground Resonance Using MR Damper	Wei Wang and Pinqi Xia Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and

		Astronautics, Nanjing 210016, China
15:00~15:30	Helicopter Vibration Reduction Using Digitally Redesigned H_∞ -controller in Observer form	Wassef Ayadi, Daniel Reber Institute of Flight Mechanics and Control, University of Stuttgart Pfaffenwaldring 7a, 70569 Stuttgart, Germany
15:30~15:50	Coffee Break	
15:50~16:20	Non-conventional Bifurcation and Chaos in Rubbing Response of a Step-shaft Rotor	Weiyang Qin, Hangshan Gao, Jinfu Zhang, Xingmin Ren Department of Engineering Mechanics, Northwestern Polytechnical University, Xi,'an, 710072, China
16:20~16:50	Planetary Gear Analysis and Synthesis for K-MAX Helicopter Rotor Transmission	Zihni B. Saribay The Pennsylvania State University State College, Pennsylvania 16802 Fu-Shang(John) Wei Adjunct Professor, University of Hartford, West Hartford, Connecticut 06117,USA
16:50~17:20	Aeroelastic Stability Analysis of Tiltrotor Aircraft in Turboprop Cruise Mode	Linghua Dong, Weidong Yang, Pinqi Xia Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
<p>Session 3: Design, Flight and Control Chairman: Prof. Edward Smith and Dr. Jinwei Shen Room 433, A18, NUAA</p>		
9:00~9:30	Multibody Dynamics Simulation of a Tiltrotor UAV	Jinwei Shen National Institute of Aerospace Hampton, VA, United States Matt Floros U.S. Army Research Laboratory Hampton, Virginia, United States Myeong Kyu Lee and Jai Moo Kim Korea Aerospace Research Institute Daejeon, Korea
9:30~10:00	Adaptive Flight Control for an Unmanned Autonomous Helicopter Based on Event Service and Neural Network	Jinfa Xu, Zheng Gao, Hui Wang and Hongxiang Jiang Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
10:00~10:30	Rotor Design for the Performance Optimization of Canard Rotor/Wing Aircraft	J.W. Lee, K.S. Jeon, M. Kim, Y.H. Byun and Y.H. Yu. Next generation Innovative Technology Research Institute Konkuk University, Seoul 143-701
10:30~10:50	Coffee Break	
10:50~11:20	The Solution For The Gearbox Of An Unmanned Helicopter With Two Coaxial Output Shafts And Double Engines	Jianping Shan Harbin Aviation Industry Group Harbin 150066, China
11:20~11:50	Control Strategy for Tilt-Rotor Aircraft Trimming in Steady Level Flight	Renliang Chen Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
14:00~14:30	Attitude Control of Tiltrotor	Xili Yang, Jihong Zhu, Zengqi Sun

	Aircraft on Helicopter Mode with Nacelle Tilting	State Key Lab of Intelligent Technology and Systems, Department of Computer Science and Technology, Tsinghua University, Beijing, 100084, China
14:30~15:00	A CHRDI Advanced Rotor System Design and Development	Junxian Guo China Helicopter Research & Development Institute, Jingdezhen 333001, China
15:00~15:30	Nonlinear Control of a Small Unmanned Tandem Helicopter	Xingli Huang, Chun-hua Hu, Jihong Zhu and Peifa Jia State Key Laboratory of Intelligent Technology and Systems, Department of Computer Science and Technology, Tsinghua University, Beijing, 100084, China
15:30~15:50	Coffee Break	
15:50~16:20	Experiment and Simulation of Composite Plates Subjected to Low Velocity Impact	Shaobo Gong and Yuefa Zhu 1 Harbin Aviation Industry Group, Harbin 150066, China
16:20~16:50	Theoretical and Experimental Research on the Electrically Controlled Rotor	Yang Lu, Haowen Wang, Zheng Gao Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
16:50~17:20	The Study of Combat Effectiveness Evaluation to Attack Helicopter	Lei Yu, Er Ai and Xiabin Song Aviation Industry Development Research Center of China No.2 Beiyuan Andingmenwai, Chaoyang District, Beijing 100012, China

Wednesday, 9 November 2005

Session 1: Aerodynamics and Performance
Chairman: Dr. Chee Tung and Dr. Wayland Y. F. Chan
Room 429, A18, NUA

9:00~9:30	Validation of Free-Vortex Embedded CAA Method for Airfoil Vortex Interaction	Seong-Yong Wie, Chi-Hoon Cho and Duck-Joo Lee Division of Aerospace Engineering Korea Advanced Institute of Science and Technology, 373-1 Guseong-dong, Yuseong-gu, Daejeon 305-701, KOREA
9:30~10:00	3D Volumetric PIV Measurements on a Hovering Model Rotor	Berend G. van der Wall DLR, Institute of Flight Systems Lilienthalplatz 7, D-38108 Braunschweig, Germany Hugues Richard DLR, Institute of Aerodynamics and Flow Technology Bunsenstrasse 10, D-37073 Göttingen, Germany
10:00~10:30	A Study on the Induced Velocity and Noise of a Scissors Rotor in	Guohua Xu, Qijun Zhao, Yanhui Peng Laboratory of Rotorcraft Aeromechanics,

	Hover	Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
10:30~11:00	Performance Analysis for the Servo-Flap Rotor	Fu-Shang Wei Kaman Aerospace Corporation Bloomfield, Connecticut 06002, U.S.A Taikang Ning Trinity College Hartford, Connecticut 06106, USA
11:00~11:30	Researches on Acoustics Characteristics of Scissors Tail Rotor	Yong Liu, Chenglin Zhang and Wenqiao Liao Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
11:30~12:30	Visit Lab of Rotorcraft Aeromechanics, NUAA	
14:30~18:00	Visit Nanjing's Attractions	
<p>Session 2: Dynamics Chairman: Prof. Shoushen Liu and Dr. Jinsong Bao Room 431, A18, NUAA</p>		
9:00~9:30	Nonlinear Dynamic Modeling Using Fully Tuned RBF Networks for 4 DOF Tilt Rotor Aircraft Platform	Changjie Yu, Jihong Zhu, Tingliang Hu and Zengqi Sun State Key Laboratory of Intelligent Technology and Systems, Department of Computer Science and Technology, Tsinghua University, Beijing, 100084, China
9:30~10:00	Vibration Analysis of Double Tapered Rotating Euler-Bernoulli Beam by Using Differential Transform Method	Özge Özdemir, Metin O. Kaya Faculty of Aeronautics and Astronautics Istanbul Technical University, Faculty of Aeronautics and Astronautics 34469, Maslak, Istanbul, Turkey
10:00~10:30	Free Vibration Analysis of a Rotating Tapered Timoshenko Beam with Bending-Torsion Coupling	Özge Özdemir and Metin O. Kaya Faculty of Aeronautics and Astronautics Istanbul Technical University Maslak, Istanbul, 34469, Turkey
10:30~11:00	An Aeroelastic Formulation for Helicopter Rotor Blades	Haowen Wang, Zheng Gao Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
11:00~11:30	Torsion Oscillation Analysis of Helicopter Drive System	Min Xu and Aimin Ling China Helicopter Research & Development Institute, Jingdezhen 333001, China
11:30~12:30	Visit Lab of Rotorcraft Aeromechanics, NUAA	
14:30~18:00	Visit Nanjing's Attractions	
<p>Session 3: Design, Flight and Control Chairman: Prof. Edward Smith and Dr. Jinwei Shen Room 433, A18, NUAA</p>		
9:00~9:30	Activity Completed at ONERA During the Chance Project	M. Costes, T. Renaud, B. Rodriguez And P. Beaumier ONERA, BP 72, 92322 Châtillon, France

9:30~10:00	Overview of the Developing Rotor Dynamic Validation From Design to Flight Test	Jinghui Deng, Yonghong Fang and Wenbiao Gu China Helicopter Research & Development Institute, Jingdezhen 333001, China
10:00~10:30	Structural Design and Optimization of Composite Blades for a Low Weight Rotor	Jianhua Zhang and Edward Smith Department of Aerospace Engineering The Pennsylvania State University University Park, PA 16803, USA
10:30~11:00	Remote Control Tilt-rotor Stability Augmentation Control System Design	Yanguo Song Laboratory of Rotorcraft Aeromechanics, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China
11:00~11:30	Open Hierarchy Architecture for Helicopter Health Monitoring System	Limin Tao, Yongcheng Xu, and Guoji Shen Mechatronic Engineering Laboratory, National University of Defence Technology, Changsha 410073, China
11:30~12:30	Visit Lab of Rotorcraft Aeromechanics, NUAU	
14:30~18:00	Visit Nanjing's Attractions	