



박 동 훈 교수

항공우주공학과
응용공기역학 및 공력설계 실험실

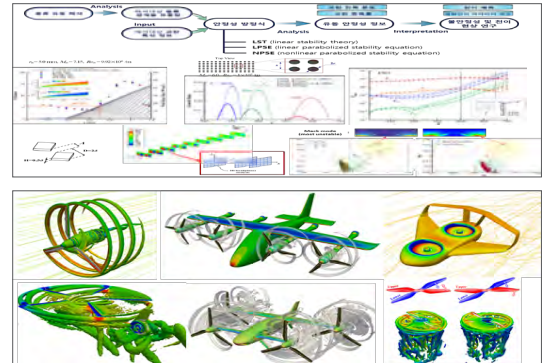
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연구분야

공력 경계층 안정성 이론 및 천이 예측 기법 / 모델링
신속 공력해석용 Panel / Actuator 기법 개발
응용 전산공기역학 및 풍동시험

대표연구

- Hypersonic Boundary Layer Instability and Transition
 - Thermochemical non-equilibrium effect
 - Passive/active laminar flow control
 - Nonlinear instability and phase influence
 - Transition modeling for RANS analysis
- Actuator Disk/Surface Methods
 - Improvement of wake field prediction
 - Improvement for neighboring blade effect
 - Development of tip loss/tip gap function
- Aerodynamic Design and Optimization
 - Design of aircraft and propeller
 - Design of scramjet air intake
- Wind Tunnel Testing and Experiment
 - Wall interference assessment and correction
 - Aircraft and propeller wind tunnel testing
 - PIV measurement of flow field



주요 연구실적

- Influence of initial phase on subharmonic resonance in an incompressible boundary layer, Physics of Fluids, Vol. 33, 044101, 2021
- Aerodynamic analysis and static stability analysis of Manned/unmanned distributed propulsion aircrafts using actuator methods, Journal of Wind Engineering & Industrial Aerodynamics, Vol. 214, 104648, 2021
- Comparative Assessment of Modified Models for Scramjet Intake Flow Analysis, International Journal of Aerospace Engineering, 9916416, 2021
- PIV Measurement of Separation Bubble on an Airfoil at Low Reynolds Numbers, Journal of Aerospace Engineering, Vol. 33, No. 11, 04019105, 2020
- Design and Performance Evaluation for Solar-Powered High-Altitude Long-Endurance Unmanned Aerial Vehicle, International Journal of Aerospace Engineering, 5782017, 2018
- Study of effect of a smooth hump on hypersonic boundary layer instability, Theoretical and Computational Fluid Dynamics, Vol. 30, No. 6, pp. 543-563, 2016

주요 연구과제

- 극초음속 화학 반응 경계층 천이 현상의 수치적 연구, 한국연구재단, 5년, 3억 2천만원(극초음속, 경계층 천이, 화학반응)
- 덕티드 팬 구동 VTOL 주위의 비정상 유동 해석, 국방과학연구소, 2년 2개월, 2억 7천 5백만원(덕티드팬, 복합형 회전익기, Actuator 기법)
- 스크램제트 복합추진시스템 특화연구실 - 흡입구 유동천이 및 형상최적화 연구(2세부), 국방과학연구소/방위사업청, 5년 1개월, 7억(스크램제트, 흡입구, 극초음속)

학회 활동

- 한국전산유체공학회 총무이사
- 한국항공우주학회 평의원 / VTOL체계 부문위원회 간사
- 한국산업응용수학회 전산이사