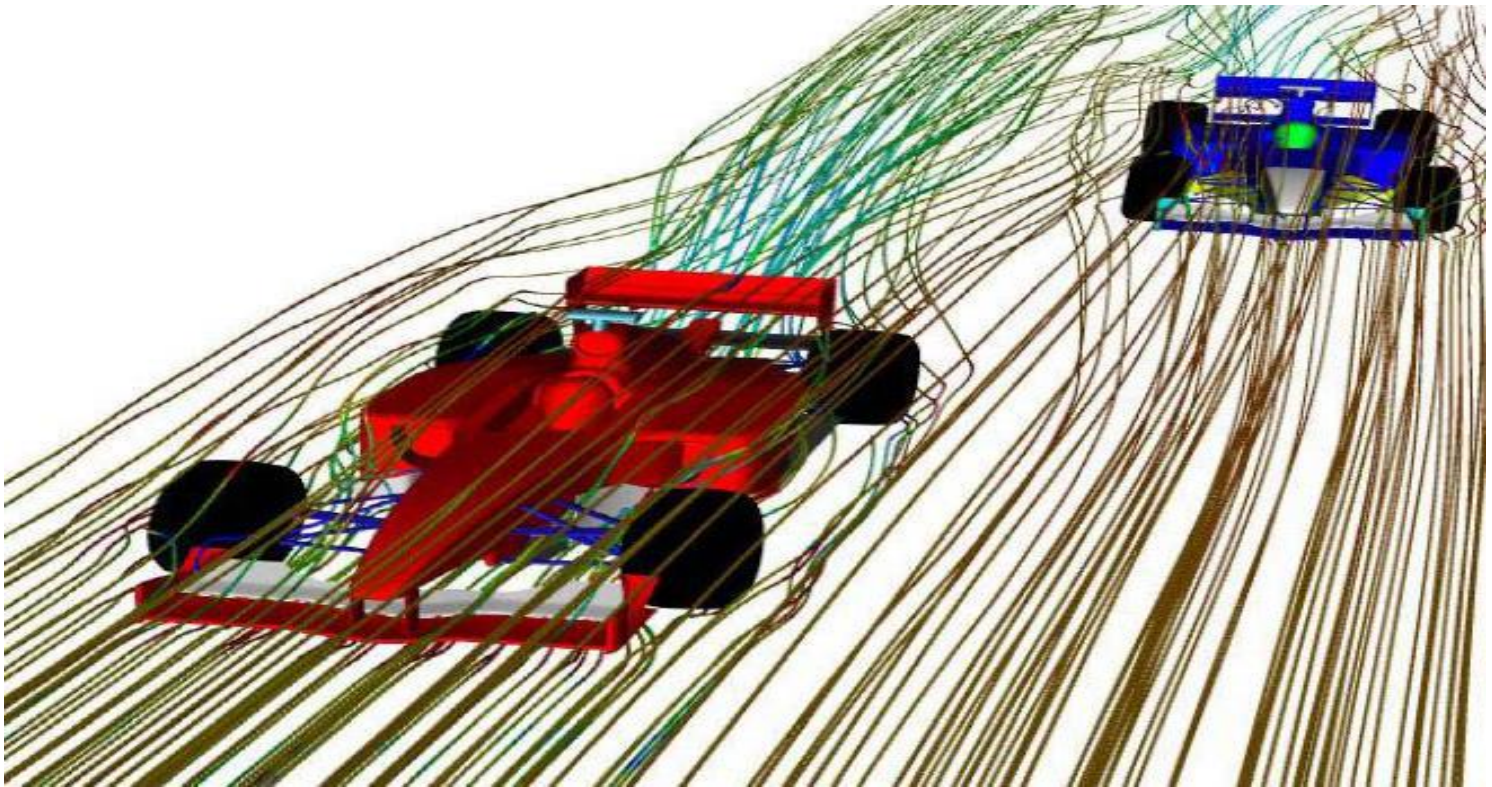


Mechanical and Aeronautical Numerical Analysis



Braverman Arik

Agenda

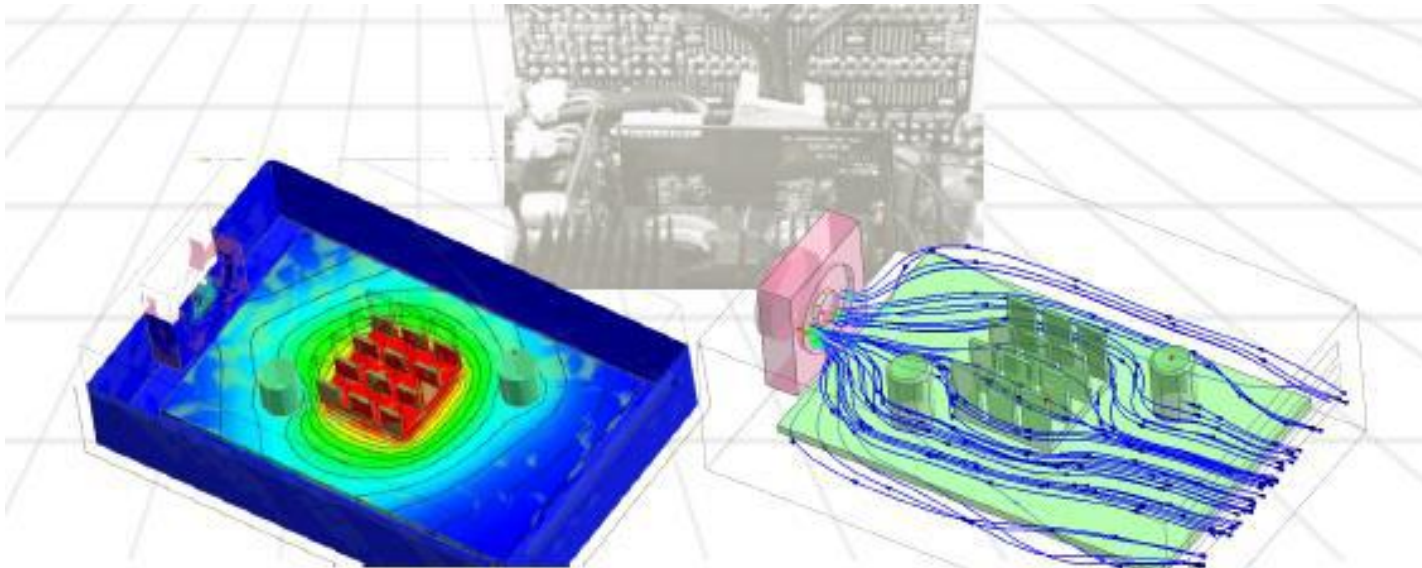
	התכנסות	8:30-9:00
	דברי פתיחה	9:00-9:20
	אהוד נופ-יו"ר הלשכה	
	דר' עמנואל ליבן – יו"ר אגודת מהנדסי מכונות ותעופה	
	מהנדס אריק ברומן- יו"ר ענף חישובים נומריים בהנדסה	
דר' אלדד לוי, CAS	Changing Phase Materials Analysis	9:20-9:45
דר' יובל לוי, ISCFDC	Optimization in CFD and Turbomachinery	9:45-10:10
מהנדס קונסטנטין ארכיפצוב, IWI	Internal Ballistic Simulation	10:10-10:35
	הפסקת קפה/תערוכה	10:35-11:00
דר' יעל יסעור, רותם תעשיות	Acoustic Simulation	11:00-11:25
דר' אדי מוזס, MSI	CFD Spreading smoke in railway Tunnel	11:25-11:50
מהנדס יצחק אפריאט, רפאל	SFRP (Short Fiber Reinforced Plastic)	11:50-12:15
מהנדס דני בן משה, Elbit ISTAR	Stress analysis of Composite Materials air vehicle using CFD pressure field	12:15-12:40
דר' דורון שלו, Doron Shalev Engineering LTD.	Screen Wall aero elasticity Stress analysis	12:40-13:05
מהנדס ברומן אריק CAD/CAM Engineering	Mesh Free simulation	13:05-13:30
	ארוחת צהרים/תערוכה	13:30-14:30
מהנדס גבי טננבאום, תע"ש (אלביט)	CFD Analyses for missiles applications	14:30-14:55
דנה נתנאל, ש.נתנאל מהנדסים יעוצים בע"מ ואופסטרים סטודיוס בע"מ	CFD Applications for fire life safety	14:55-15:20
אלון אשכנזי, Optunity	תכנון וחישוב מערכת זרימה ייבוש אוויר לחלונות המשרדים בבניין "תוצרת הארץ" בתל אביב	15:20-15:45
יובל אולמן, אלביט (אלאופ)	Case study: "CFD analysis of external flow over "airborne gimbal"	15:45-16:10



Topic For Discussion

- CFD flow analysis for electronic packaging
- FSI analyzes combine strength and flow
- CFD analyzes for aeronautics analyzing the flight envelope
- Heat transfer analysis using finite element and volume method
- Fire analysis to describe the steady state and transient of the phenomenon
- Random, shock, and harmonic analysis
- Turbo-Machinery CFD simulations for the analysis of pumps and turbines
- Optimization methods
- Smoke and combustion management
- Meshfree

Packaging Electronic Analysis Issues

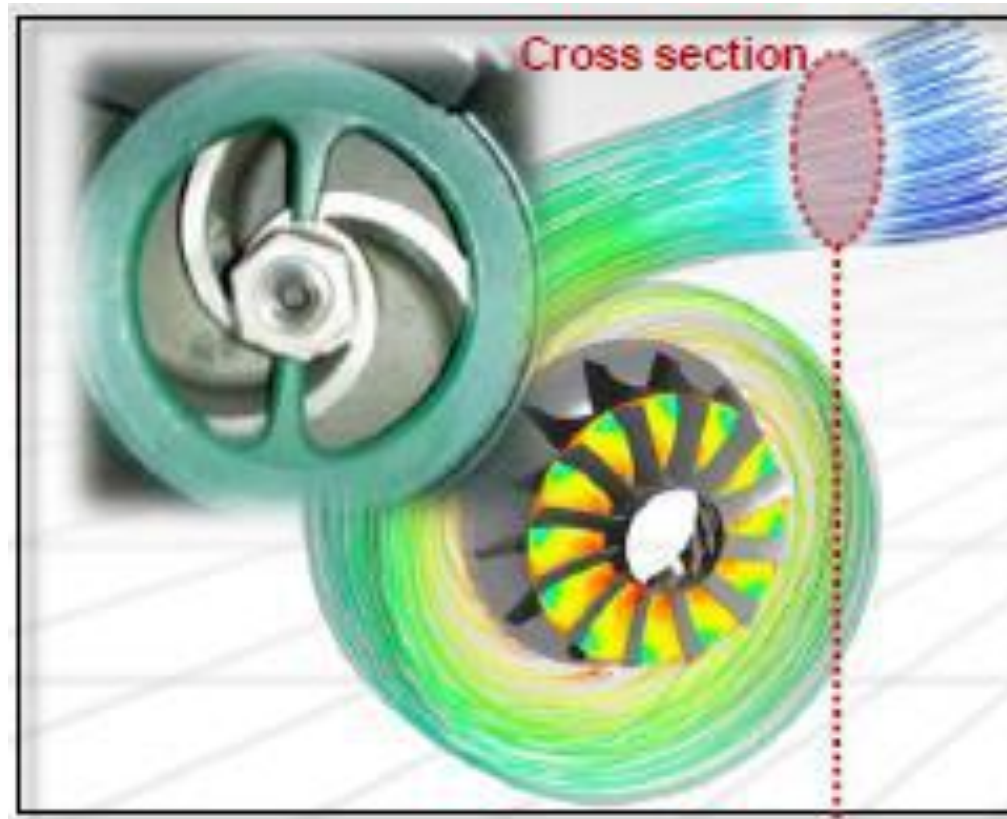


Heat flow analysis for PCB cooling

Complex heat transfer analysis of electric device assembly

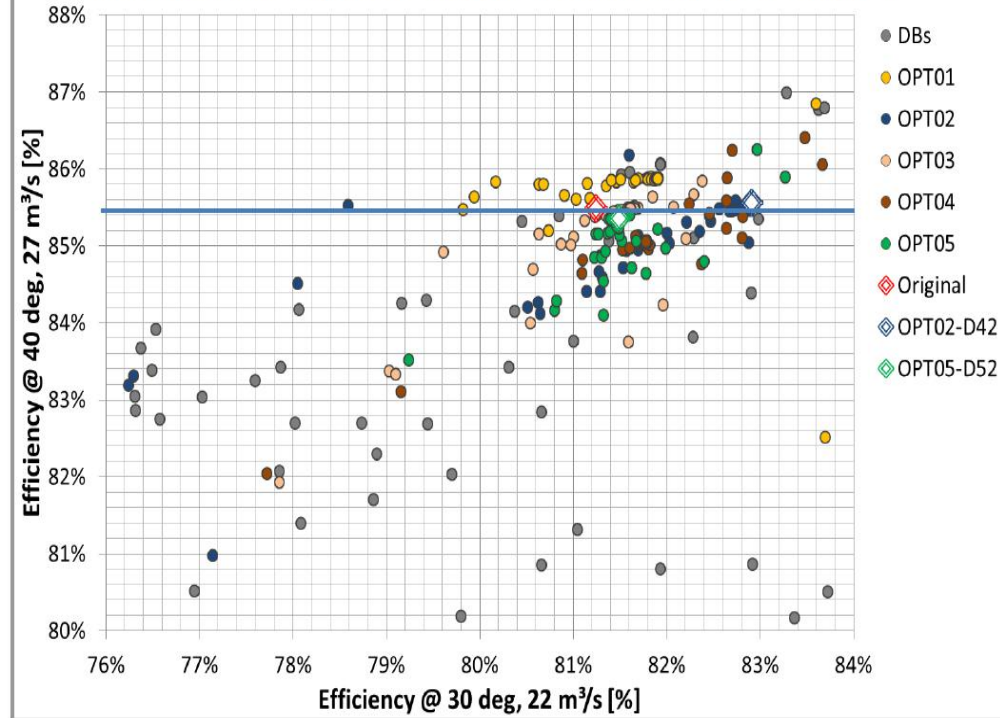
Turbo-Machinery CFD simulations for the analysis of pumps and turbines

Fan, Pump and Blower Design

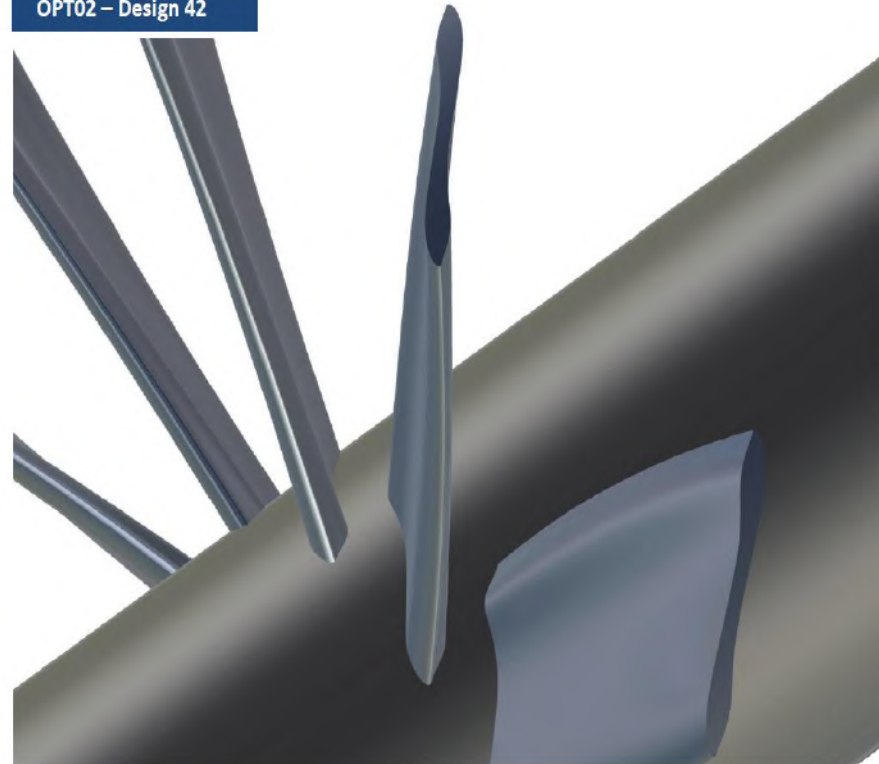


Optimization

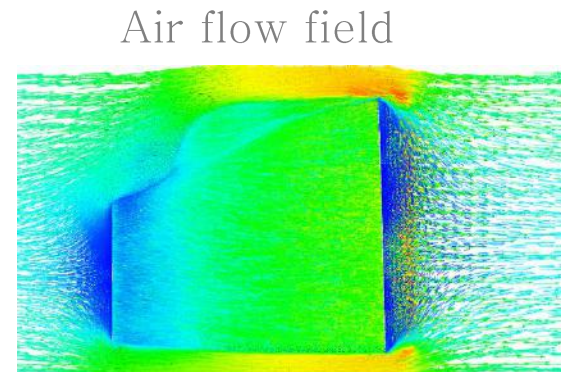
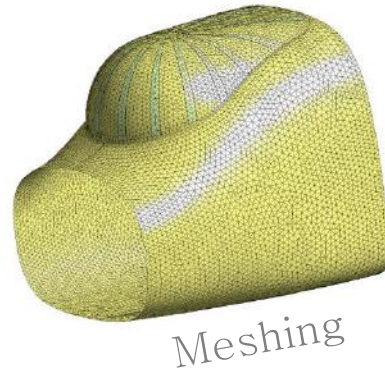
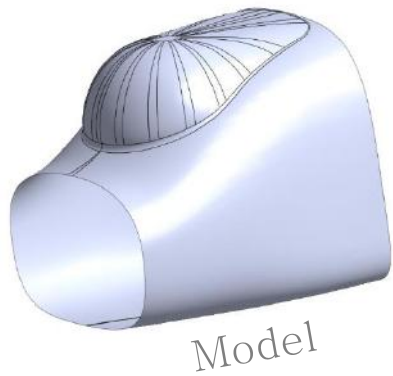
Database: Efficiency @ 40° Stagger vs. Efficiency @ 30° Stagger



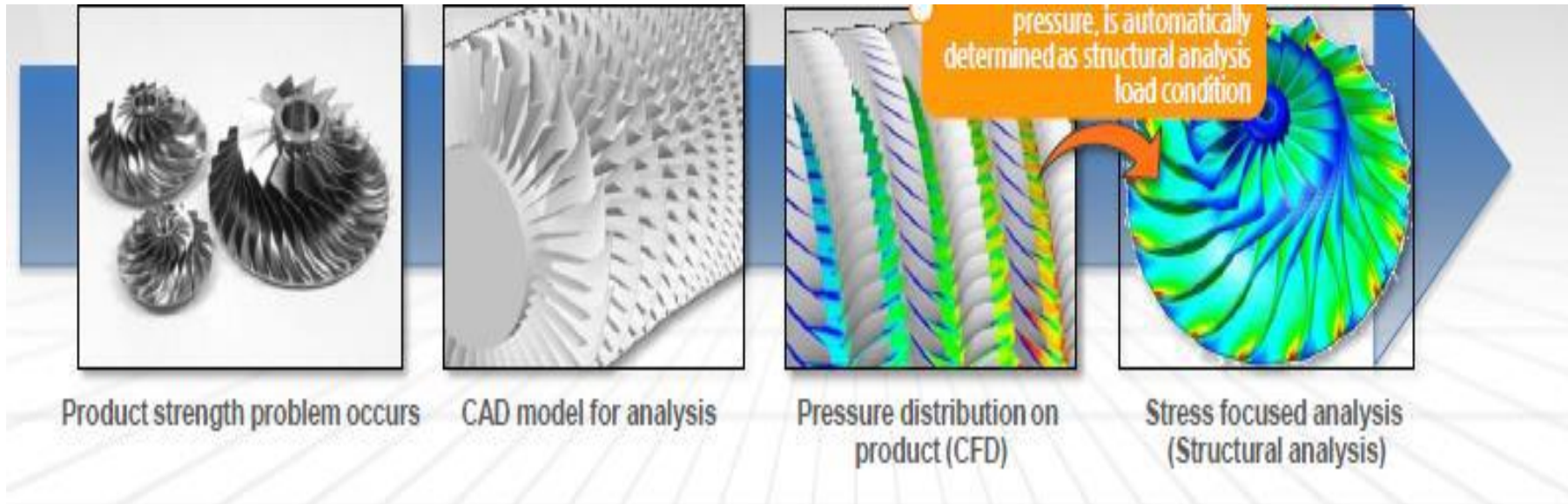
OPT02 – Design 42



FSI (Fluid Structure Interaction)



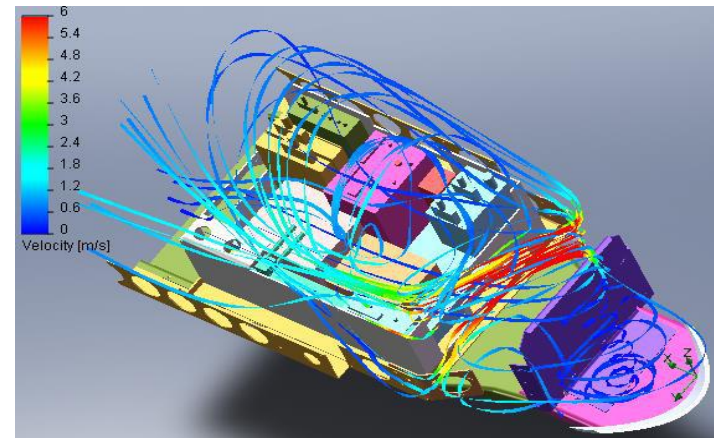
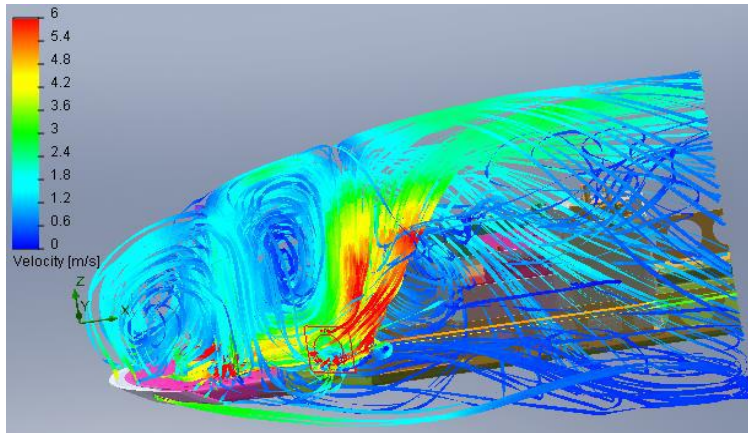
FSI (Continue)



FSI

CFD Analyzes for Aeronautics

Airplane Analysis



Fire and Smoke Analysis

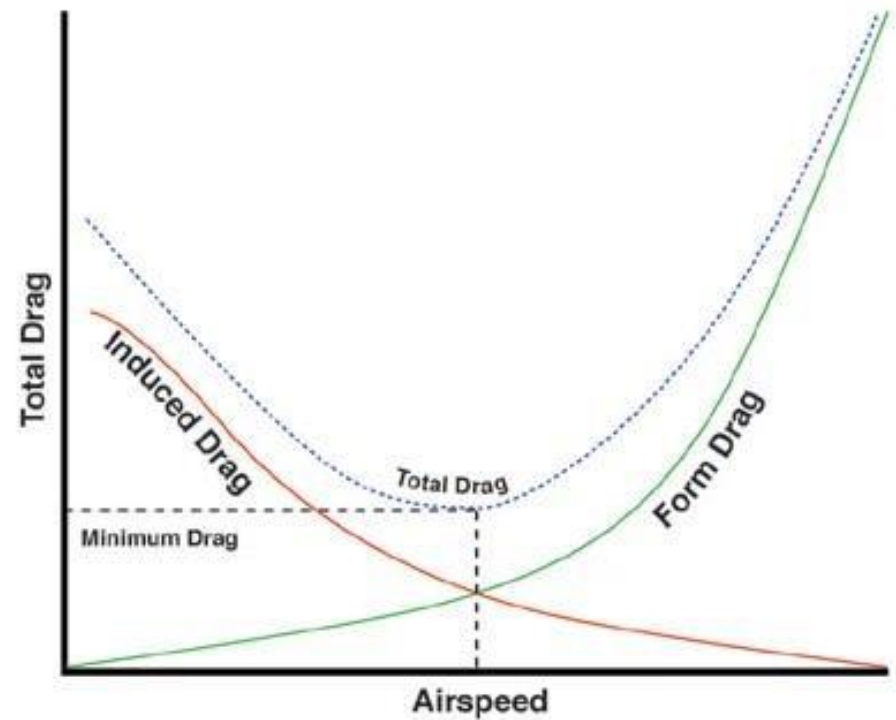
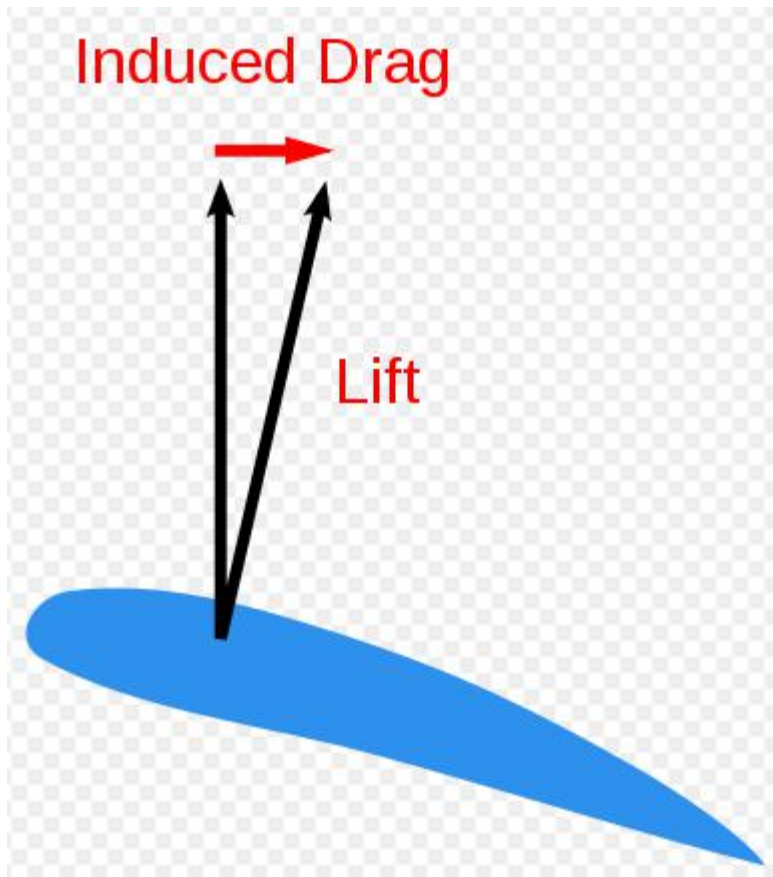


(a) Liquid mixture

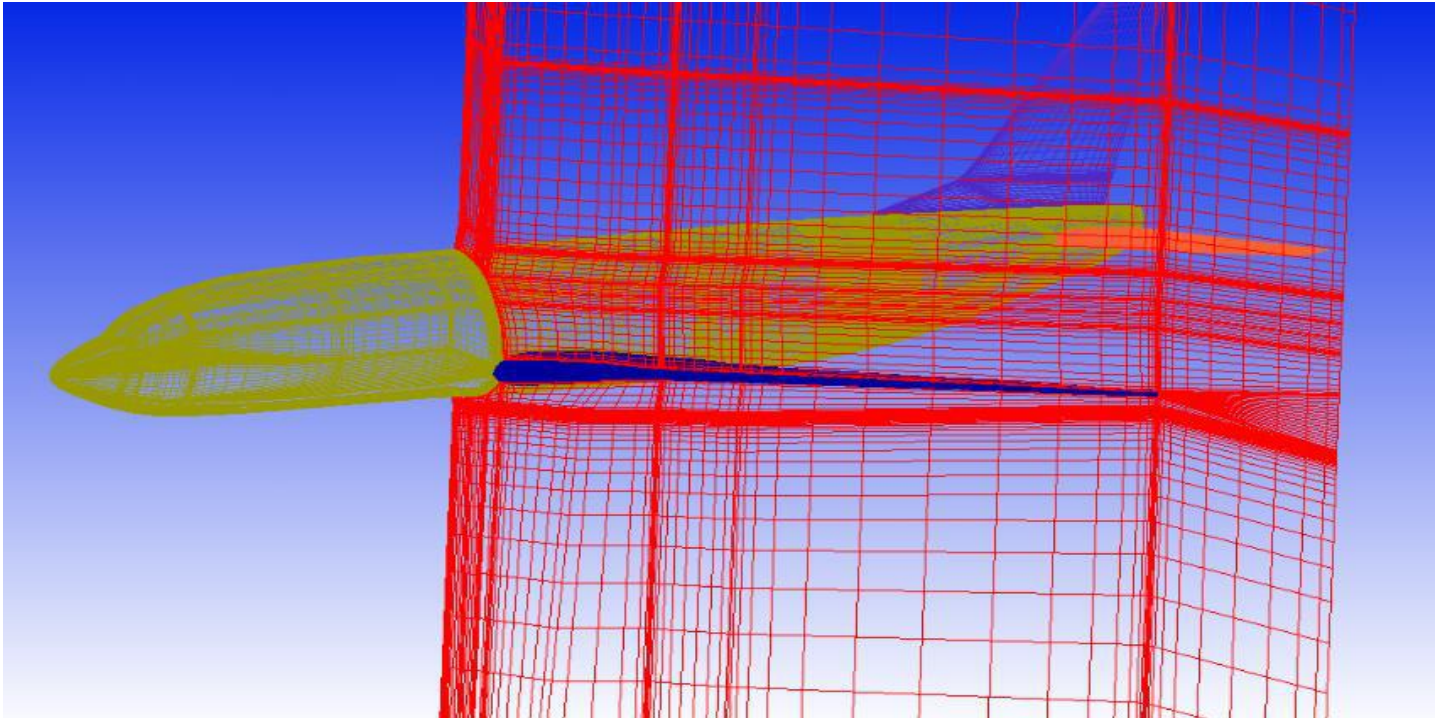


(b) Multiphase flow

Main Analysis Issues (Continue)



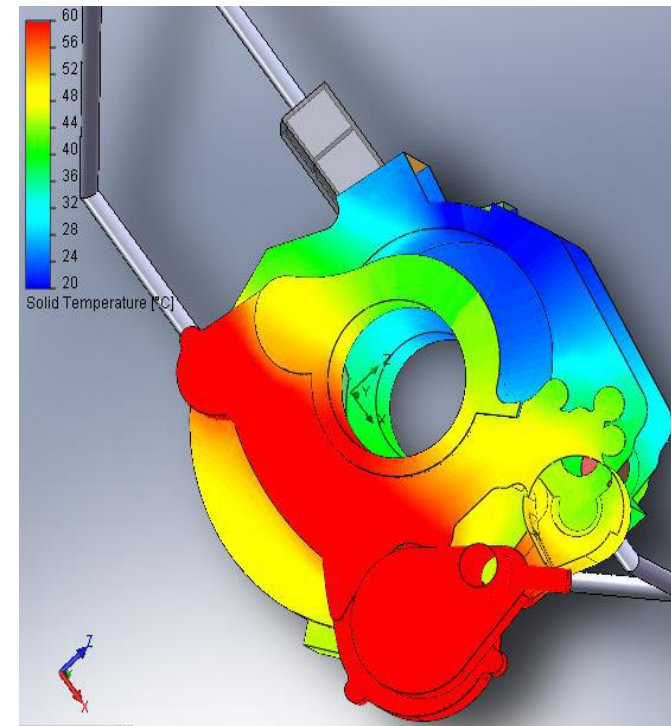
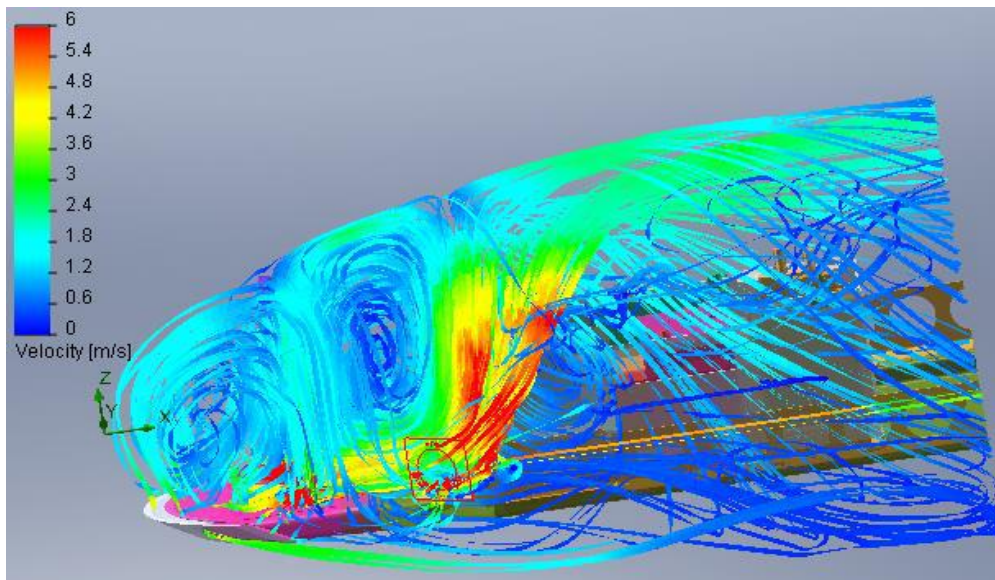
Main Analysis Issues (Continue)



The power required to overcome the aerodynamic drag is given by:

$$P_d = \mathbf{F}_d \cdot \mathbf{v} = \frac{1}{2} \rho v^3 A C_d$$

Heat transfer analysis using finite element and volume method





Thank You!

Big Enjoyment