Technische Universität Braunschweig

Gecko

Design for IGA-type discretization workflows

Funded by the European Union

Online Introduction Meeting for the Fellows

DC4 – Personal Presentation

Presenter name: Juan Ignacio Camarotti
Email: juanicama7@gmail.com
Date: 10.11.2023

About me…

Personal Information

- **Full name:** Juan Ignacio Camarotti
- **Age:** 24 years old
- **Place of Birth:** Casilda, Santa Fé, Argentina
- **Interests and hobbies:**
  - ❑ Language enthusiast
  - ❑ Flying

My place of birth

Gecko
Design for IGA-type discretization workflows

Technische Universität Braunschweig

About me…

Education

Master Degree in Aeronautical Engineering (2018 – 2023)

- **University:** Instituto Universitario Aeronáutico, Córdoba, Argentina
- 5-Year Programme in Aeronautical Engineering
- **Strong foundations** in Aerodynamics, Structural Analysis and Numerical Methods
- **Capstone Project**

Conceptual and Preliminary Design of a 9-Seat General Aviation Aircraft (FAR-23)

CM-22 "SKYCLIMBER" Aircraft (Capstone Project)

Gecko
Design for IGA-type discretization workflows

Technische Universität Braunschweig

About me…

Work Experience

Engineering Consultant at Equatorial Space Engineering

June 2022 – November 2022

Development of a 3-DoF Simulator for probe rockets trajectory calculation using Object-oriented programming (OOP) techniques in Fortran

IA-63 Pampa Aircraft

Head of Flight Physics in the IA-63 Pampa III FTD – FAdeA

August 2022 – Present

- Implementation and validation of the IA-63 Pampa III Flight Model
- Implementation and validation of the Honeywell TFE731-40-2N engine model

IA-63 Pampa Aircraft Flight Training Device

Gecko
Design for IGA-type discretization workflows

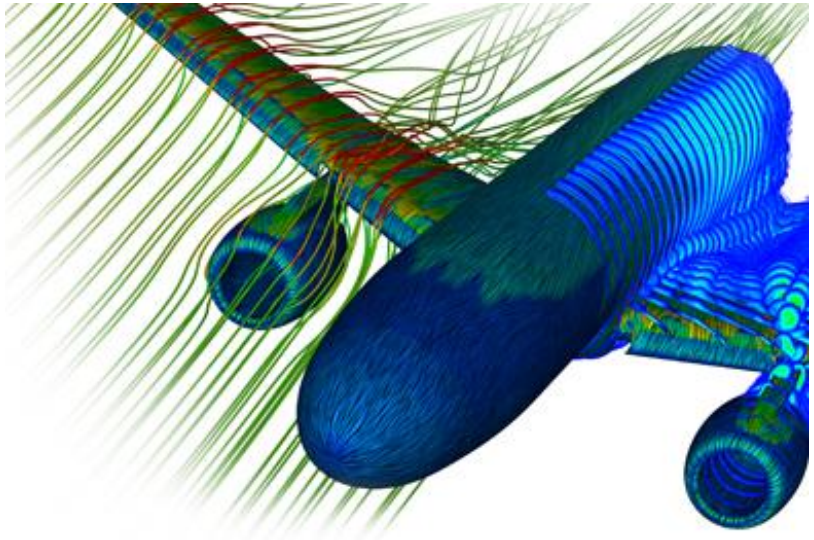
Technische Universität Braunschweig

Why did I choose this research project?

High affinity with **numerical engineering simulations**, specially regarding *Fluid-Structure Interaction (FSI)*

Real chance of making a meaningful **contribution** on **industry practices,** bridging the existing gap between the CAD and CAE models (i.e. different geometry representations)

Contribute to the development and enhancement of the renowned **Kratos Multi-Physics open-source code,** making the advancements accessible to a large community of researchers and practitioners



KRATOS MULTI-PHYSICS

Gecko
Design for IGA-type discretization workflows

Technische Universität Braunschweig

DC4 – Research Field

Doctoral Candidate in the field of Co-simulation strategies involving IBRA for solution of multi-field problems

Supervisor: Prof. Dr. Ing. habil. Roland Wüchner

Objectives:

- Development and assessment of mapping operators between different discretizations
- Combination of different field solvers (e.g. fluid, structure, acoustic, …) by suitable coupling algorithms and effective data transfer approaches to enable efficient and also robust multi-field simulations
- Assessment of IBRA-solver-benefits in surface-coupled problems (like FSI)

Institut für Statik und Dynamik

KRATOS MULTI-PHYSICS

Gecko
Design for IGA-type discretization workflows

Technische Universität Braunschweig

Technische Universität Braunschweig

Gecko
Design for IGA-type discretization workflows

European Commission

Thank you!

Presenter name: Juan Ignacio Camarotti
Email: juanicama7@gmail.com
Date: 10.11.2023