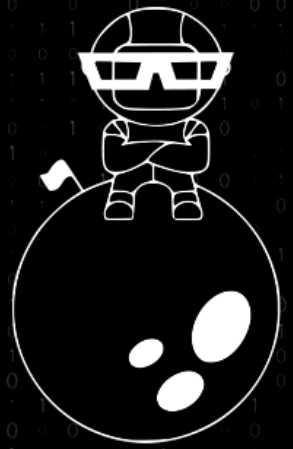


Course Organisation

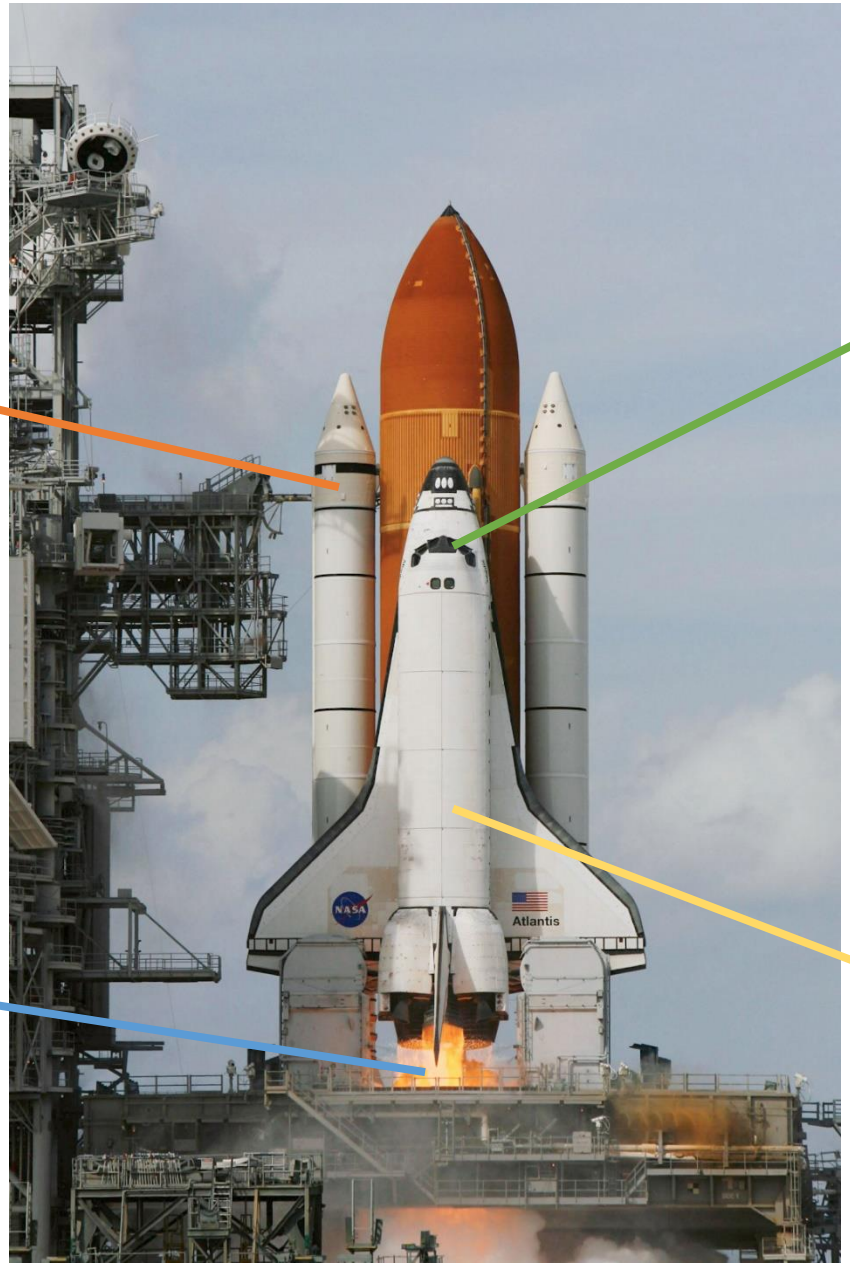
SPACE
INFORMATICS

SIC Saarland Informatics Campus

Meet the Crew

Assistants
- Gregory Stock

Instructors
- Juan Fraire
- Holger Hermanns
- Andreas Schmidt

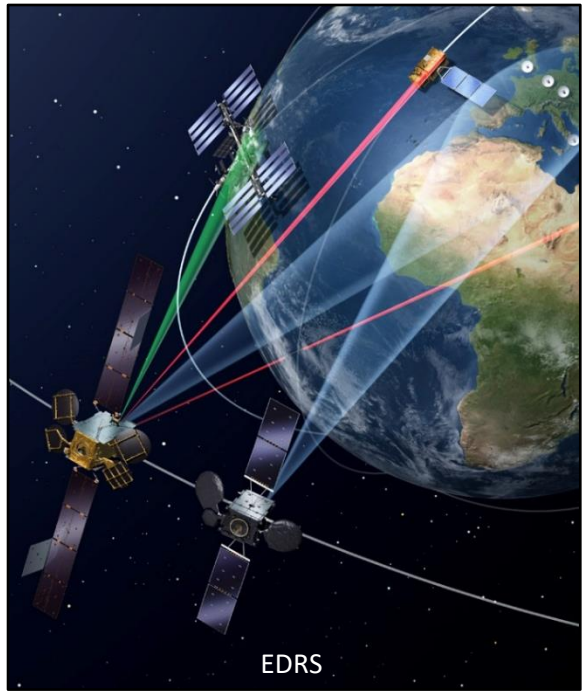


Tutors
- Alexander Haberl
- Konstantin Kopper

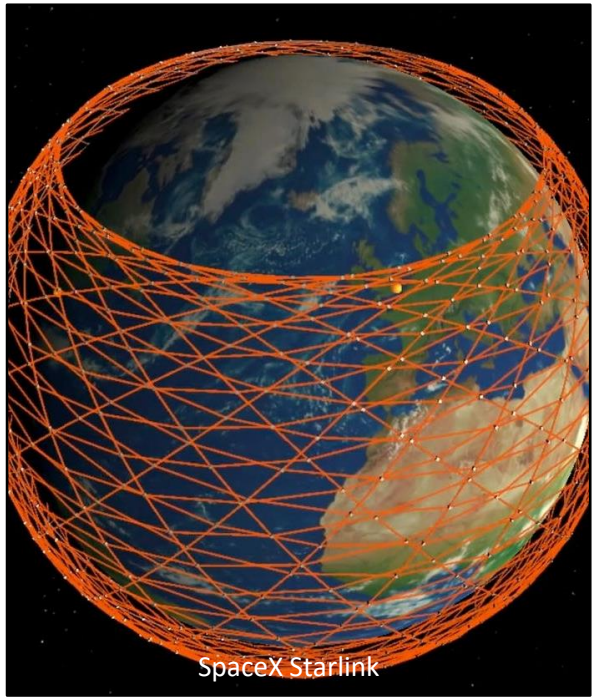
You

Space Informatics

Motivation

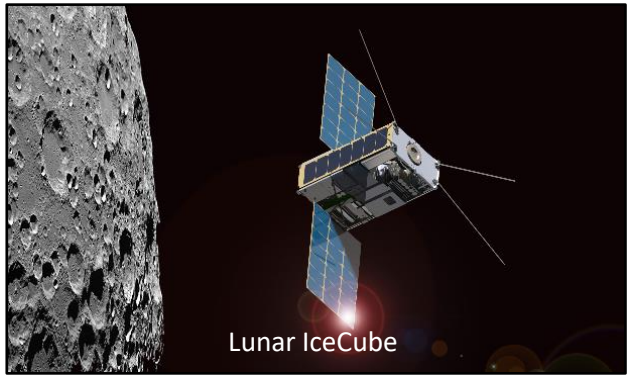

EDRS

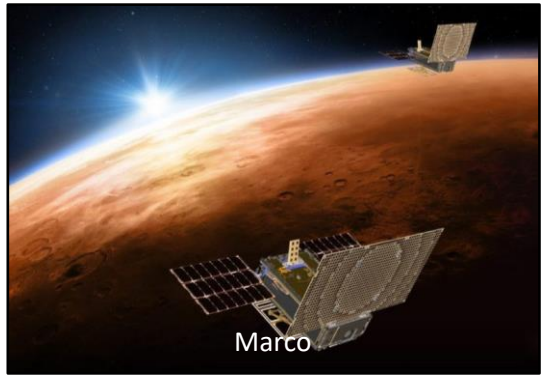

Svalbard


SpaceX Starlink

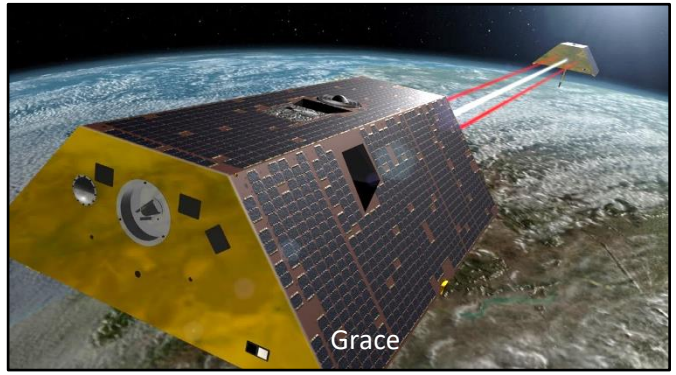

PRISMA


GomX-4


Lunar IceCube

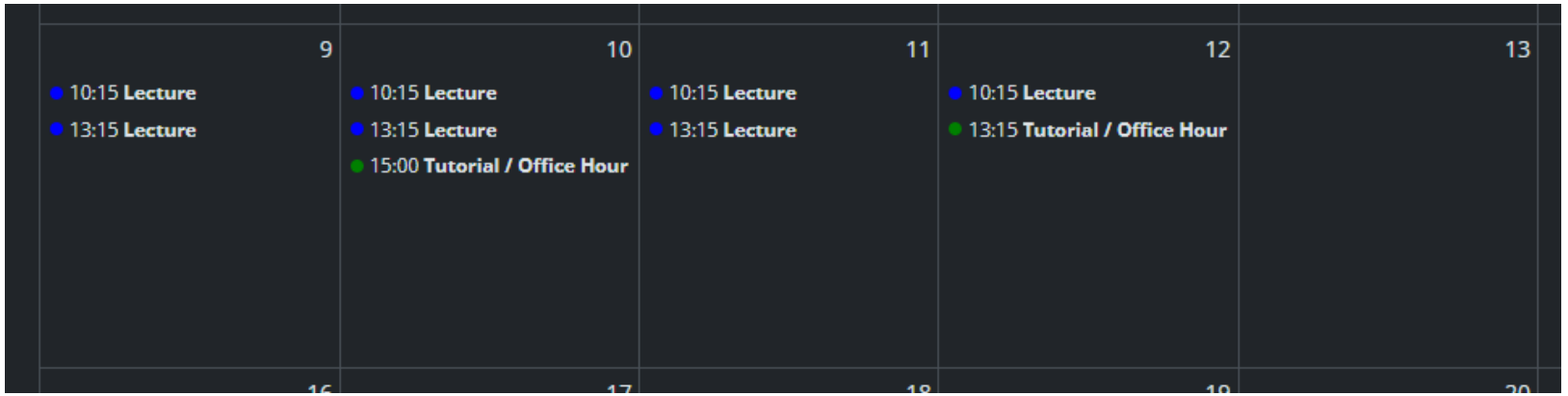

Marco


Planet

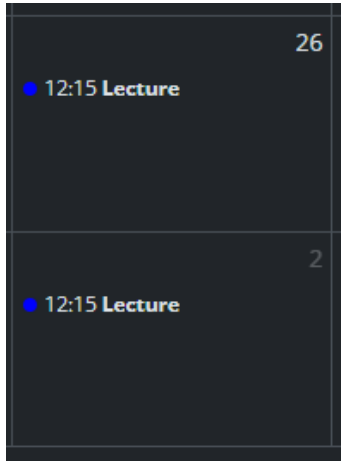

Grace

Schedule

- Block Course (this week)



- Weekly Lectures
  - roughly each Thu at 12:15
  - Starting Oct. 26
  - … up to Jan. 18
- Tutorials (TBD)



More info in the dCMS Calendar

- Throughout the course, we will use STK,
  a popular tool to model, analyze, and visualize space systems.

- Windows only!
  - Working on VM (VirtualBox) to be uploaded
    in the "Materials" section of dCMS.
  - Office Hour tomorrow: support with installation and licensing.

- Our license is valid for STK Version 12.7.x.

Tutorials / Office Hours

Tutorials

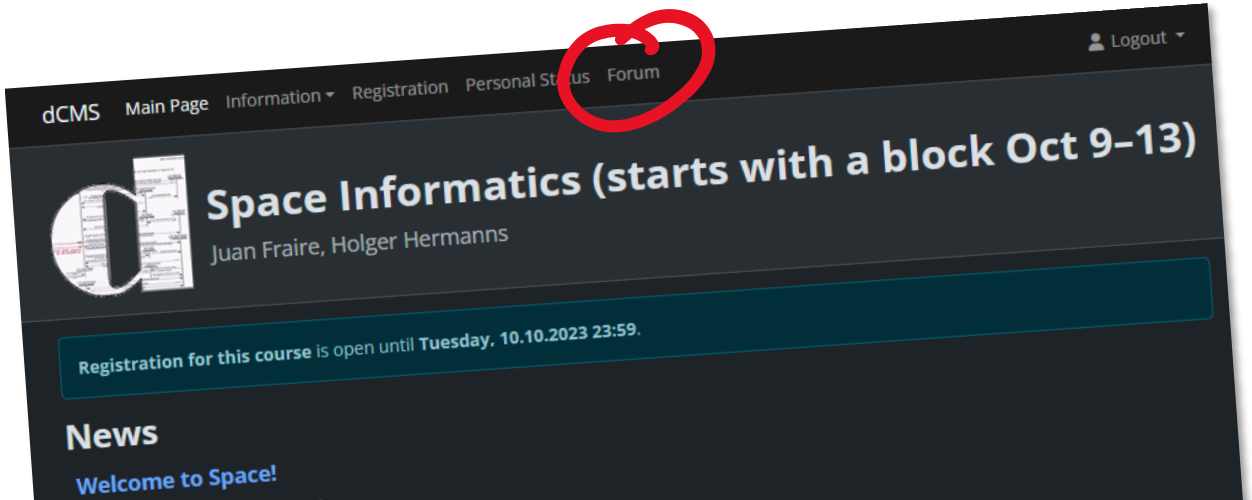
- discussion of exercise sheets
- more exercising to help you prepare for the exam

Office Hours

- ideal workspace, supported by our tutors
- for specific questions (exercise sheets, projects, ...) **and just to work on exercises**

Forum in dCMS

https://forum.spain.cs.uni-saarland.de/



Projects

- **Project P1:** STK Level 1 Certification
  - Release: Thu, Oct 12
  - Submission Deadline: TBD
- **Project P2:** STK for Networking
  - Release: TBD
  - Submission Deadline: TBD

groups of 2

- **Project P3:** Applied Informatics
  - Release: TBD
  - Submission Deadline: TBD
  - part of it graded with bonus points

groups of 2

Approval Conditions / Exams

- **Admission to Exams**
  - pass projects P1, P2, and P3
- **Written Exam**
  - Thursday, February 1, at 12:15
  - A cheat sheet (A4, double-sided, handwritten) can be brought to the exam.
- **Re-Exam**
  - some day in March
  - might be oral
- **Final Grade**
  - 70% maximum of both exams + 30% P3 bonus points

Tentative Course Contents

- **Fundamentals**
  - Space Applications
  - New Space
  - Physics and Orbits
  - Propagation and Perturbation
  - Launch and Maneuvers
  - Trajectories Design
- **Technology**
  - Satellite Technologies
  - Basic Communications
  - Link Budget and Multiplexing
  - Space Networks
  - Transport Layer
  - Simulation and Analysis Tools
- **Informatics**
  - Linear and Dynamic Programming Optimization
  - Battery-Aware Scheduling
  - Contact Plan Design
  - Routing in LEO
  - Machine Learning in Space

Today

This week

This semester

Guest Lectures

From Genuine Space Companies

- Thu, **Nov 23**, at 12:15
  - Guest Lecture: **Gabriel Ruffini** (INVAP),
    “Software Ecosystem in the Life Cycle of a Satellite.”

- Thu, **Jan 18**, at 12:15
  - Guest Lecture: **David Valcárcel Romeu et al.** (SES),
    “Software Systems to operate SES’
    Multi-Orbit Satellite Fleet.”

Ready for Liftoff