

Mathilde Guitton

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EDUCATION

Higher Institute of Aeronautics and Space (ISAE-SUPAERO) — 2020-2024 — Toulouse, France

MSc Aerospace Engineering - Major in Earth observation and Universe sciences

Relevant Coursework : Advanced Celestial Mechanics, Fluid mechanics, Aircraft aerodynamics, Astrophysics, Physics of measurement and instrumentation, Gravitation, Computer Vision, Data Analysis, Neuro-IA

Space systems architecture project: Preliminary design for the HERA scientific mission (operating point, pre-dimensioning of the spacecraft and InterSatellite link, technical risks identification, provisional cost budget)

Paris Observatory, University degree in Planetary Sciences — 2023-2024 — Paris, France

Politecnico di Milano — September 2022 - February 2023 — Milan, Italy

Erasmus program in the MSc Space engineering

Coursework : Spacecraft Guidance and Navigation, Satellite communication and positioning systems, Spacecraft Attitude Dynamics : worked with a team on the orbit determination of a Cubesat 6U

EXPERIENCE

Jet Propulsion Laboratory (JPL, NASA) — March - August 2024 — Pasadena, CA, USA

Intern in Cosmology

Developed advanced signal separation techniques, using neural networks and Bayesian frameworks for the detection of CMB B modes, unique signatures of inflation in the primitive universe

European Space Agency (ESA) — March - August 2021 — Noordwijk, Netherlands

Intern in System Engineering on Proba-3, TEC-SPP

Analysed the flying formation data on Proba-3, a technological demonstration mission devoted to high precision formation flying. Calibrated the separation angle of the stack of satellites after launch.

LEADERSHIP

Vice president of Supaero Space Section — 2021 - 2022 — Toulouse, France

Elected best french student association in 2021 by Le Classement des Associations. Managed the 80 members association and the sponsors (Thalès, CNES, PwC, ArianeGroup) or partnerships (ONERA). Examined the possibility of a software-defined radio on Æther, a supersonic rocket with an hybrid motor.

Secretary General, Sauveurs en Herbe — 2023 — Paris

Helped build the association whose aim is to teach first aid to children in primary schools. sauveursenherbe.fr

ISAE-SUPAERO Foundation Grant — 2024 — Toulouse

Winner of an international research exchange grant

SKILLS & INTERESTS

Technical : Python, Java, C, Matlab, Microsoft 365, Patran/Nastran, GMAT-NASA

Language : Native French, fluent English, independent user German, Russian notions

Music : Practiced the piano for 15 years

Sports : President of SUPAERO ultimate and fitness clubs, university competition in rugby, martial arts

Travels : Architecture study trips in 12 countries, solo trip to Asia for 4 months (to write a dystopian novel)