Goestchel Quentin

https://qgoestch.github.io/qgoestch//

My PhD defense is scheduled for October 2023, and I am currently seeking a post-doctoral research opportunity in applied environmental acoustics. I am interested in utilizing numerical methods as tools to enhance our understanding of the interactions between sound and biodiversity.

Education

- **Joint Research Unit in Environmental Acoustics (UMRAE)** — **Strasbourg, France**
  PhD degree in acoustics (candidate) — *[scheduled] Oct, 2023*
  Acoustic propagation in forest environments. Numerical study for environmental applications:
  - Theoretical study on the Transmission Line Matrix Method for modeling long-range forest scenarios.
  - Updating, improving and maintaining a code architecture in Python and OpenCL (C99).
  - Collaboration with bioacousticians (MNHN) for in-situ data.
  - Supervision of an intern in computer science.

  Supervisors: Gwenaël Guillaume, David Ecotière, Benoit Gauvreau
- **Sorbonne Université** — **Paris, France**
  Master's degree in physical acoustics, Joint with ENSPS — *Oct, 2020*
  Graduated with highest honors.
- **Ecole Normale Supérieure Paris-Saclay (ENSPS)** — **Cachan, France**
  Master's degree of Ecole Normale supérieure Paris-Saclay — *Oct, 2020*
  Multidisciplinary 'Grande Ecole', specialization in engineering and research.
- **Lycée Eugène Livet** — **Nantes, France**
  Preparatory classes for engineering colleges — *Jul, 2015*
  Two-year undergraduate intensive course in Physics and Technology.
- **Lycée Aristide Briand** — **St-Nazaire, France**
  High School Diploma — *Sep, 2013*
  Baccalaureat with a major in physics. Graduated with highest honors.

Experience

- **Strasbourg University** — **Strasbourg, France**
  Computer science teacher (Lectures, tutorials and practical work) — *Oct, 2022 - Feb, 2023*
- **Joint Research Unit in Environmental Acoustics (UMRAE)** — **Strasbourg, France**
  Trainee researcher — *Mar, 2020 - Jul, 2020*
  Numerical modeling of acoustic propagation over a forest floor using the TLM approach.
- **Eindhoven University of Technology (TU/e)** — **Eindhoven, Netherlands**
  Trainee researcher, supervisor: Maarten Hornikx — *Sep, 2017 - Jun, 2018*
  - Applicability of the sound diffusion equation for acoustic simulations on 3D urban models.
  - Development of a finite volume method Matlab code for irregular tetrahedral meshes.
- **CERN, the European Organization for Nuclear Research** — **Geneva, Switzerland**
  Trainee engineer — *Apr - Jun, 2017*
  Modeling the noise impact of the LHC expansion (HL-LHC) with an engineering software.

Special skills

- **Languages**: French as mother-tongue, fluent in English (Cambridge Advanced C1), proficient in Spanish
- **Programming languages**: Python, C99 (OpenCL), Zsh, Bash, Matlab
- **Documents rendering languages**: LaTeX, Markdown

- **Softwares**: FreeCAD, Solidworks, Slurm Workload Manager, Git, Inkscape

Driving License

Extracurricular activities

- mountaineering, climbing, hiking, backcountry skiing, alpine skiing, sailing, bass guitar

National Scientific Communications

- **Technical days on acoustics and vibration** — **Aix-en-Provence, France**
  Virtual — *Jun, 2023*
  Oral presentation 'Propriétés du modèle TLM pour la propagation du son à l'extérieur : Effets de dispersion numérique'
- **Engineering Sciences Doctoral School Congress** — **Vannes, France**
  In-person — *Jun, 2022*
  Oral presentation 'Acoustic propagation in forest environments. Numerical study for environmental applications'
- **16th French Acoustics Society Congress** — **Marseille, France**
  In-person — *Fev, 2022*
  Oral presentation 'Stability analysis of TLM model for sound propagation in outdoor environment'
- **'Doctoriales' Planning, Mobility and Environment** — **Le Croisic, France**
  In-person — *Oct, 2021*
  Poster 'Acoustic propagation in forest environments. Numerical study for environmental applications'

International Scientific Communications

- **10th Forum Acousticum** — **Torino, Italy**
  Scheduled, in-person — *Sep, 2023*
  Oral presentation 'Transmission Line Matrix Method for sound propagation modelling In forests: comparison with in-situ measurements'
- **24th International Congress On Acoustics** — **Gyeongju, South Korea**
  Virtual — *Oct, 2022*
  Oral presentation 'Properties of the transmission line matrix model for outdoor sound propagation: Numerical dispersion effects'

Publications

Q. Goestchel. *Acoustic Propagation in Forest Environments. Numerical Study for Anthropogenic and Ecological Applications. [forthcoming]*. PhD thesis, 2023.

Q. Goestchel, G. Guillaume, D. Ecotière, and B. Gauvreau. Transmission Line Matrix Model: Numerical Dispersion Effects on Simulated Specular Reflection [under submission process]. (4398222), March 2023.

Q. Goestchel, G. Guillaume, David Ecotiere, and B. Gauvreau. Properties of the transmission line matrix model for outdoor sound propagation: Numerical dispersion effects. In *International Congress on Acoustics*, October 2022.

Q. Goestchel, G. Guillaume, D. Ecotière, and B. Gauvreau. Analysis of the numerical properties of the transmission line matrix model for outdoor sound propagation. *Journal of Sound and Vibration*, page 116974, August 2022.

E. Walther and Q. Goestchel. The P.E.T. comfort index: Questioning the model. *Building and Environment*, 137C:1–10, June 2018.