



# PhD Position – Small Wings, Loud Songs

## Bioacoustics & Biomechanics of Song Production in Crickets and Bush-Crickets

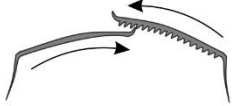


### Topic:

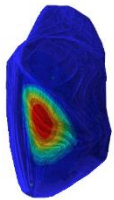
Small insects like crickets and bush-crickets produce surprisingly loud songs to attract distant mating partners by rubbing their wings together. These wings act like natural miniature loudspeakers as they resonate and amplify the vibrations produced by the animals.



For our new Project, I am looking for a highly motivated and independent PhD student to study the bioacoustics and biomechanics of song production in these insects. The project aim is to understand which morphological structures, biomechanical processes and material properties influence the acoustic properties – the tuning – of miniature loudspeakers.



Expected start date: August 2022 or thereafter.



### Methods:

- Sound recordings and analysis
- Laser Doppler vibrometry for the analysis of wing vibrations
- AI-supported motion tracking of singing behaviour
- Computational modelling of wing structures
- Nanomechanical & microscopy methods to determine material properties



**Interested in finding out how small animals produce loud songs?**

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