Detection of transient communication signals in weakly electric fish

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Introduction

The time-frequency tradeoff makes reliable signal detection and simultaneous sender identification of freely interacting individuals impossible. This profoundly limits our current understanding of chirps to experiments with single - or physically separated individuals.

Chirps during competition



Chirp detection





• Two fish compete for one hidding place in one tank,

• Experiment had a 3 hour long darkphase and a 3 hour long light phase.



Interactions at modulations



Conclusion

• Our analysis is the first to indicate that *A. leptorhynchus* uses long, diffuse and synchronized EOD*f* signals to communicate in addition to chirps and rises.

• The recorded fish do not exhibit jamming avoidance behavior while close during synchronous modulations.

• Synchronous signals **initiate** spatio-temporal interactions.