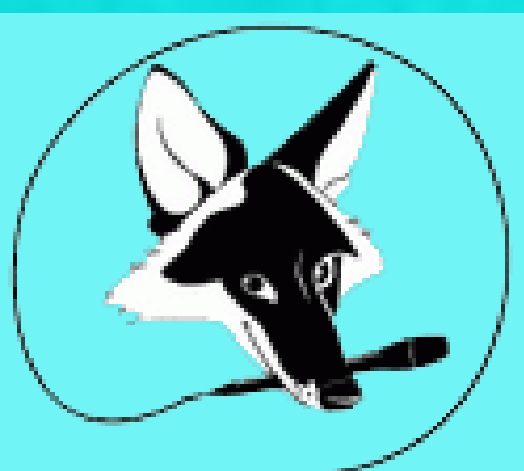


Male impala (*Aepyceros melampus*) rutting calls: bout structure, the acoustics and remarkable similarity of the rutting and alarm snorts



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STUDY SITE AND ANIMALS

RECORDING



Namibia, Okambara Elephant Ranch,
15000 hectares (S 22.69, E 18.21)



2-28 May 2015
800 free-ranging
common impala

4 SongMeter SM2+
near a water pool

22 different recording places,
0.5-12 km to each other



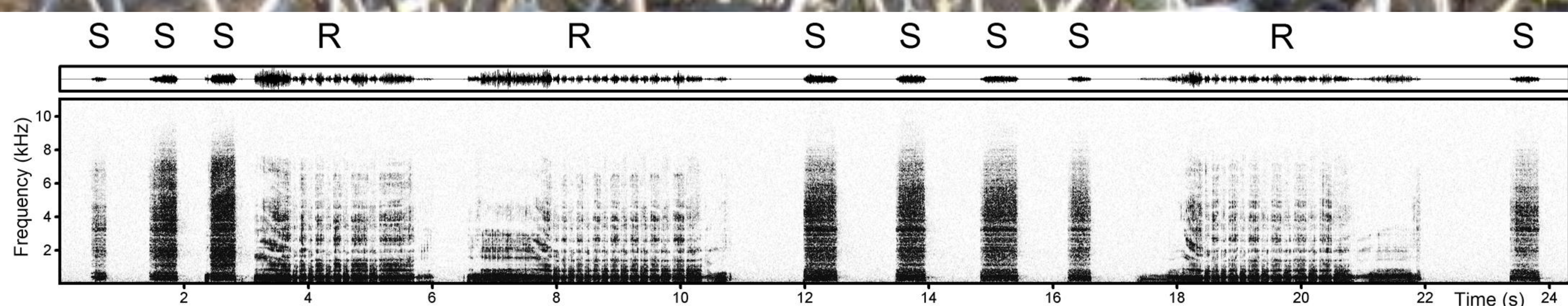
From May 2 to May 28, 2015, from 14:00 p.m.
to 10:00 a.m. 11,030 of 9-min wav-files
(1655 h of recording in total)

Detailed acoustic analyses: 201 rutting bouts (2709 calls)
and 38 series of alarm calls (38 calls)

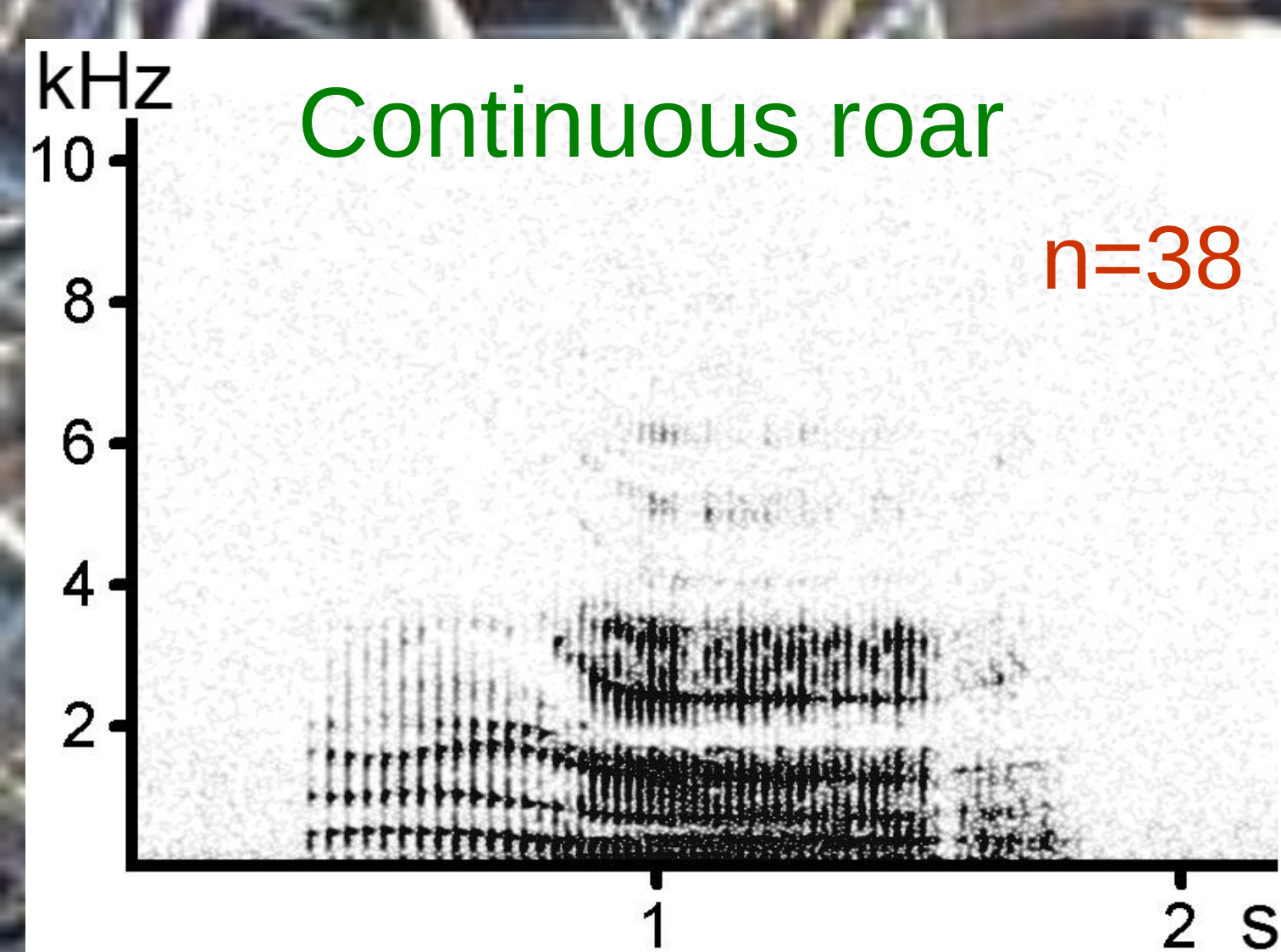
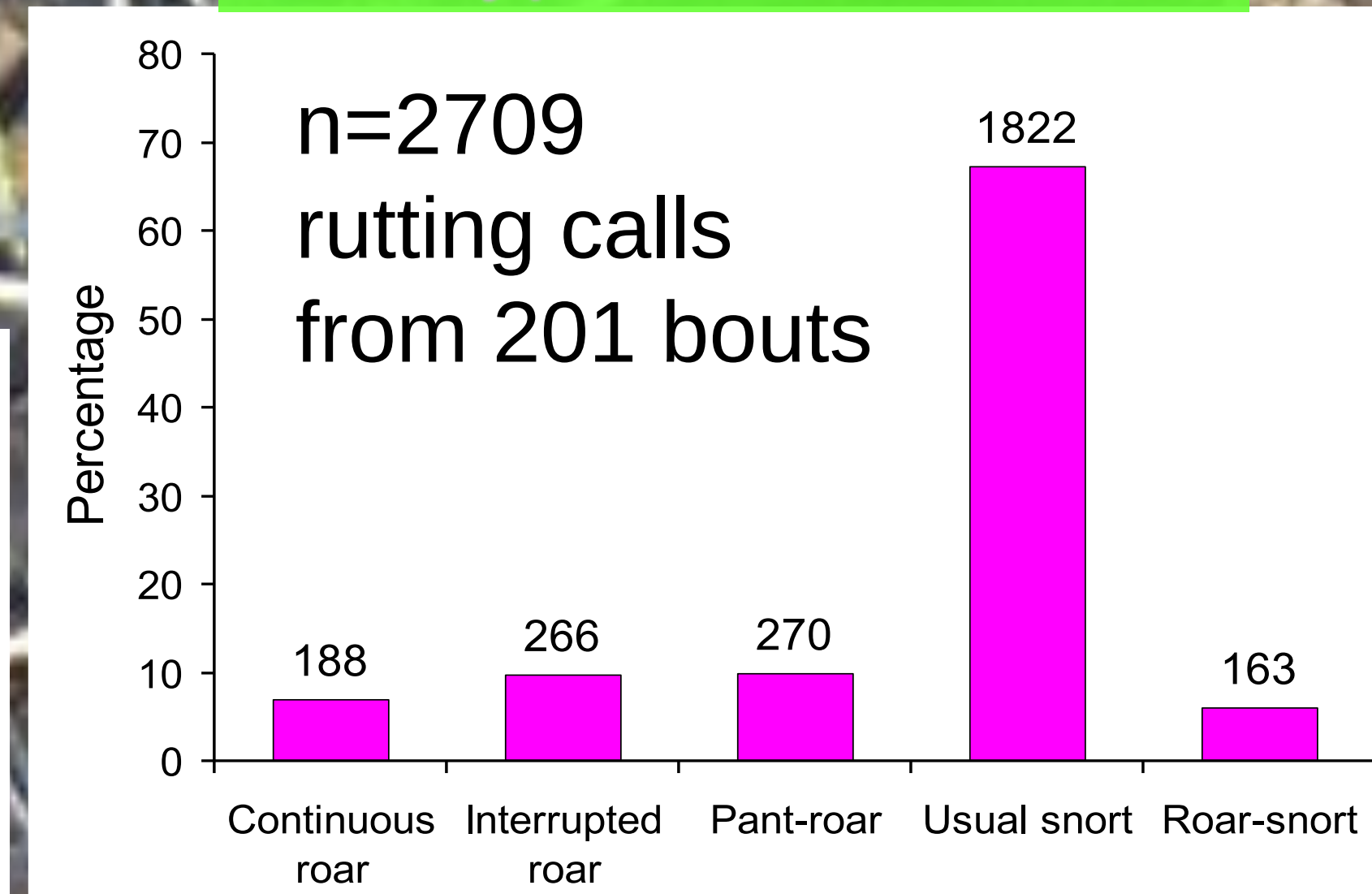
MALE RUTTING CALLS

Bout of rutting calls

Bouts contained 13.5 ± 6.5 rutting calls (from 4 to 38) per bout.
Bout duration was 20.6 ± 13.7 s (from 5.4 to 113.2 s).

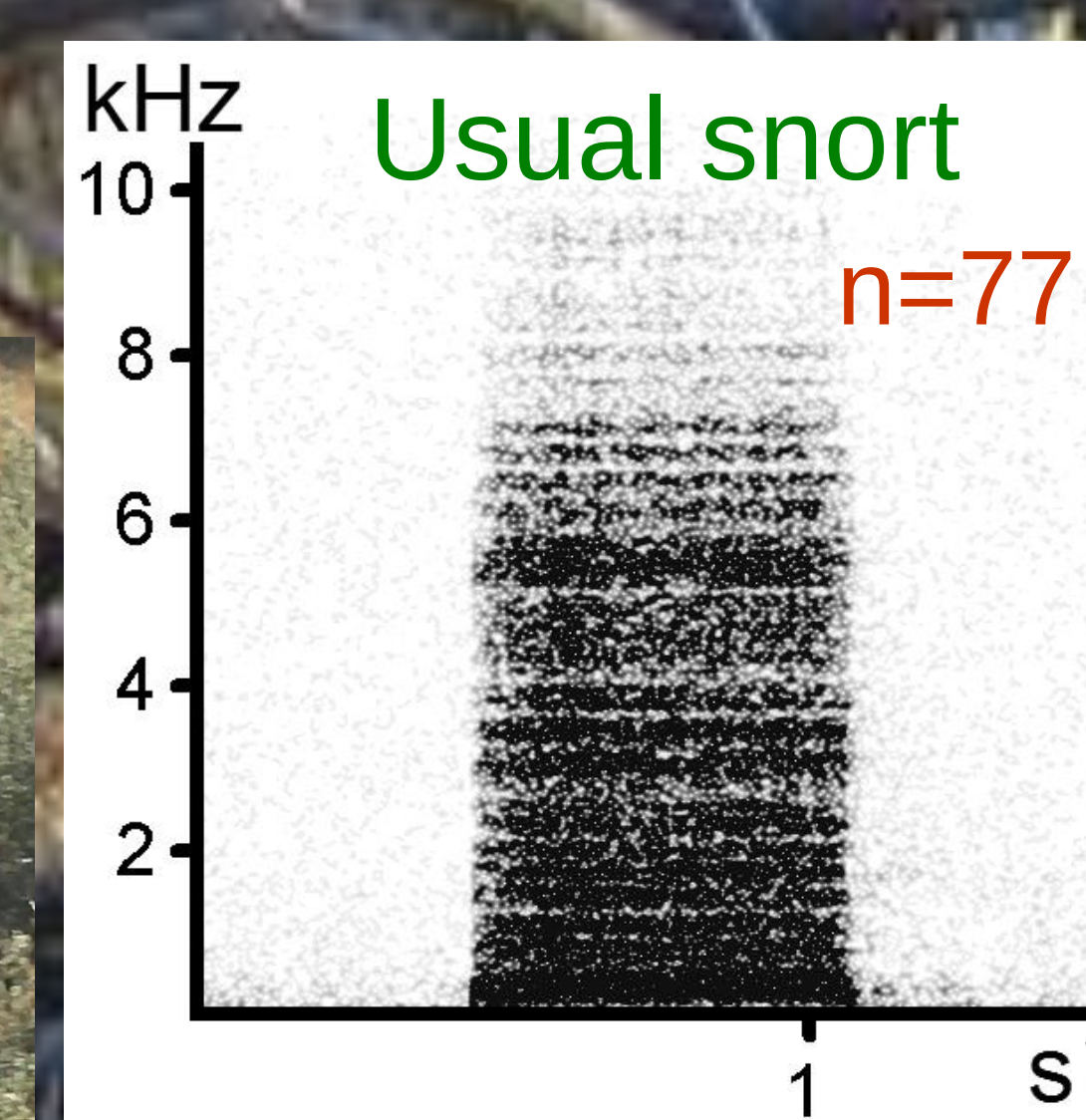


Call types within bouts

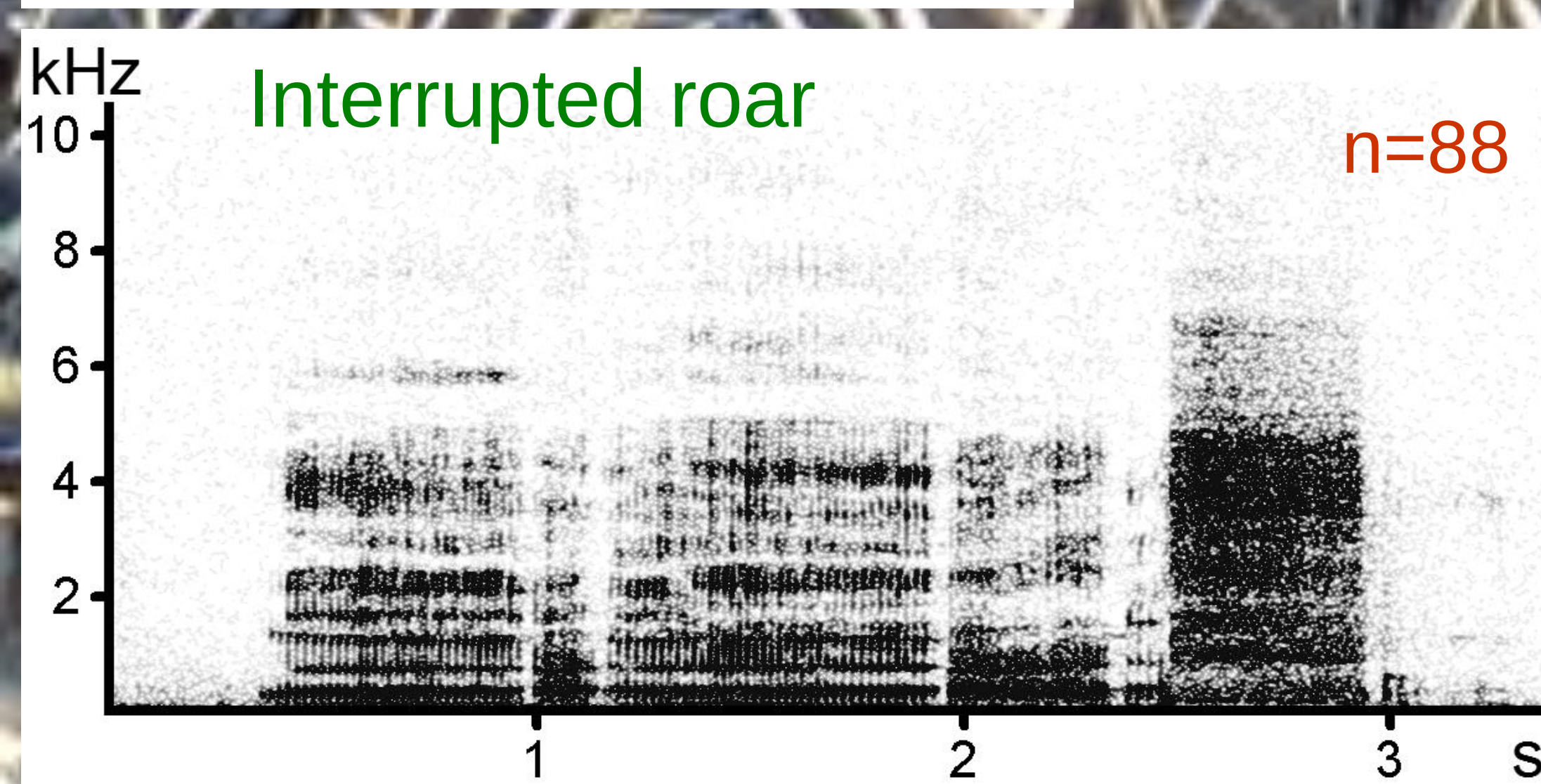


Dur=1.68s
f0=49.8Hz
F1=345Hz
F2=747Hz
F3=1244Hz
F4=1738Hz
vtl=382mm

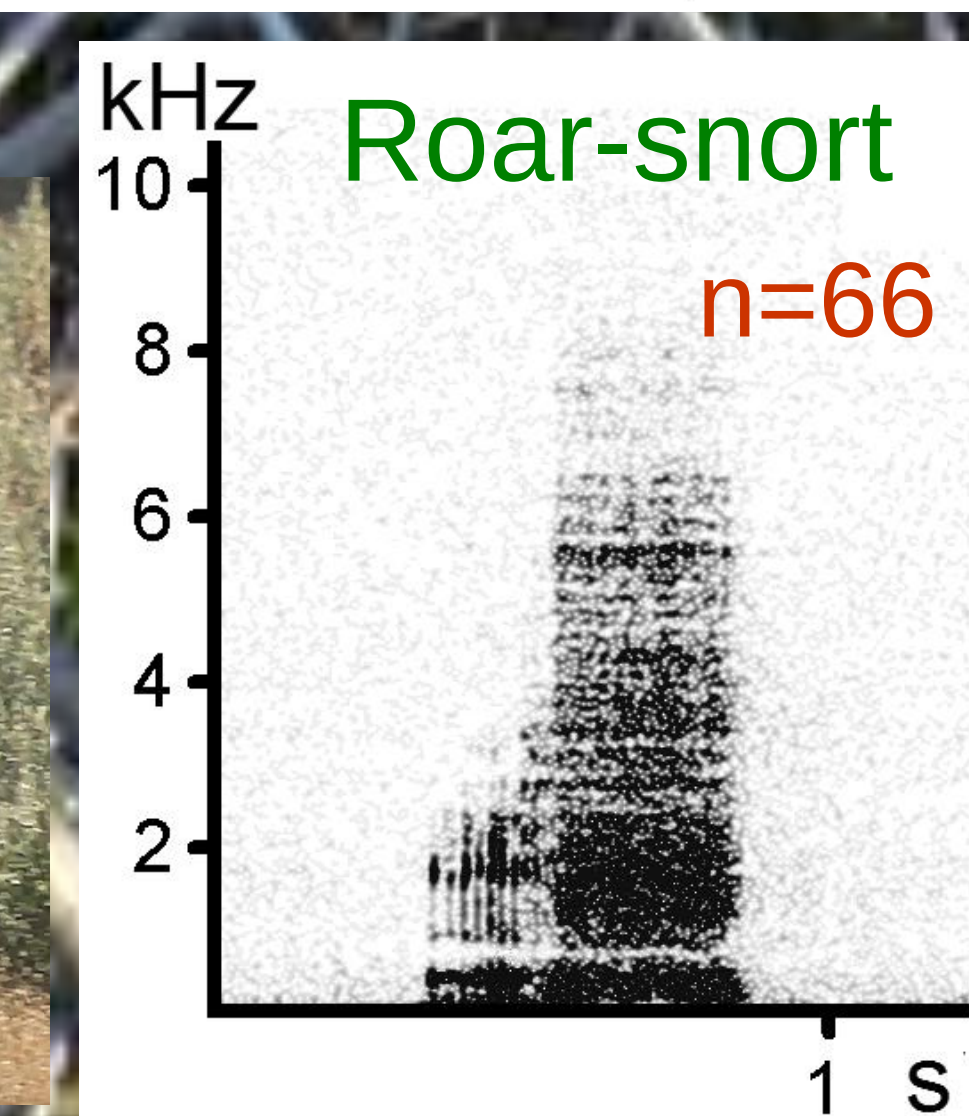
Oral vocal tract length estimation in video single frames



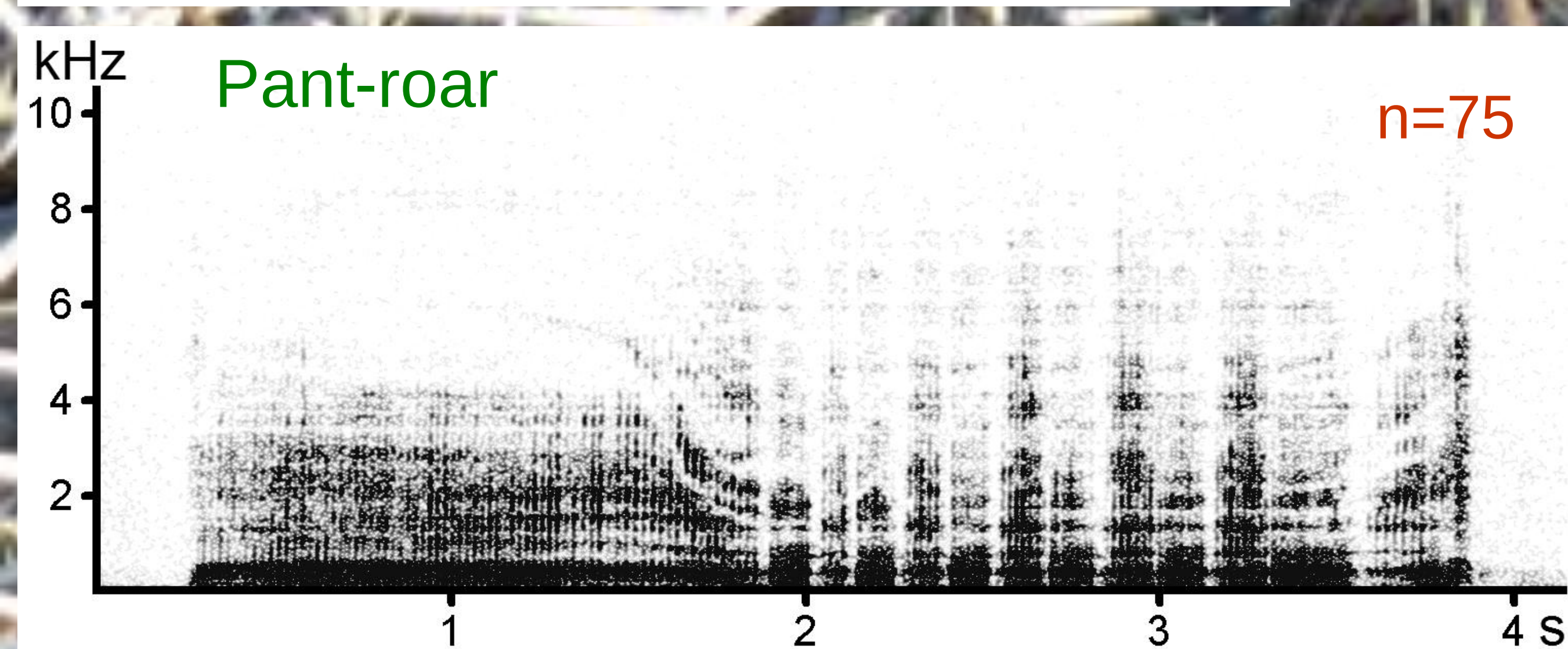
Dur=0.42s
fpeak=1066Hz
q25=1113Hz
q50=2103Hz
q75=3462Hz
interval=0.56s



Dur=3.05s
f0=50.0Hz
F1=353Hz
F2=742Hz
F3=1289Hz
F4=1751Hz
vtl=380mm

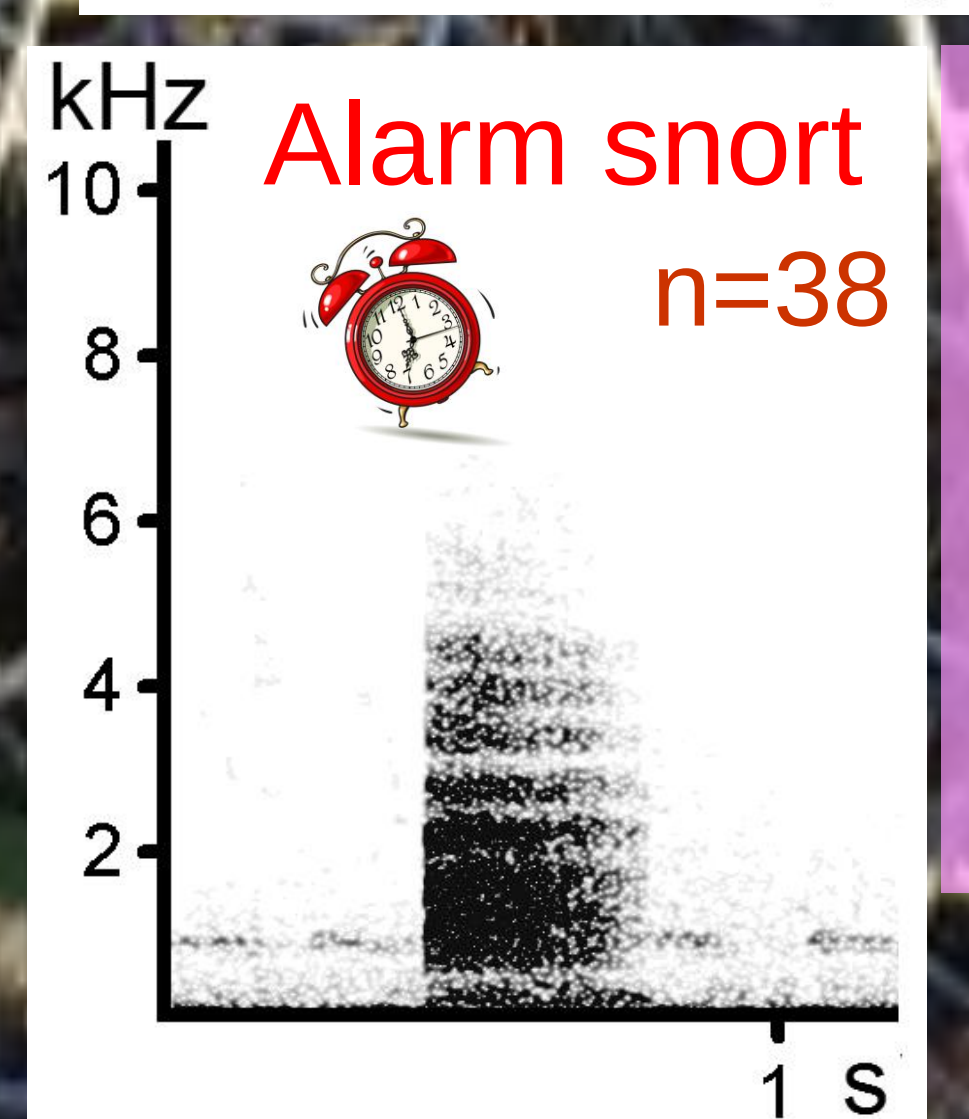


Dur=0.43s
fpeak=997Hz
q25=1050Hz
q50=1935Hz
q75=3532Hz
interval=0.42s



Dur=3.32s
f0=51.5Hz
F1=347Hz
F2=747Hz
F3=1260Hz
F4=1730Hz
vtl=382mm

The maximal
vocal tract
elongation
was 108.0 mm
or about 37%



Dur=0.28s
fpeak=11207Hz
q25=1177Hz
q50=1879Hz
q75=2870Hz
interval=13.13s

Additional inhalations during the interrupted and pant-roars did not affect fundamental frequency and formants but enable emission of longer roars.



Alarm snorts differed from the usual snorts and roar-snorts by their shorter duration, by the lower 1st and 2nd power quartiles and the longer intercall interval.