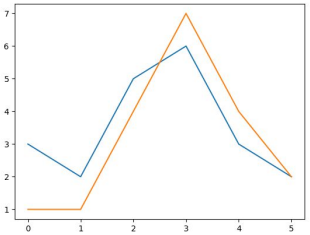
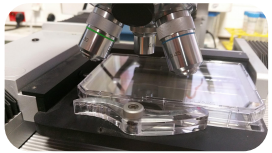
Electric field and *C. elegans*

Louise Jacquot - Tanguy Chotel - Adrien Vergès

Electro4worm

Our project:





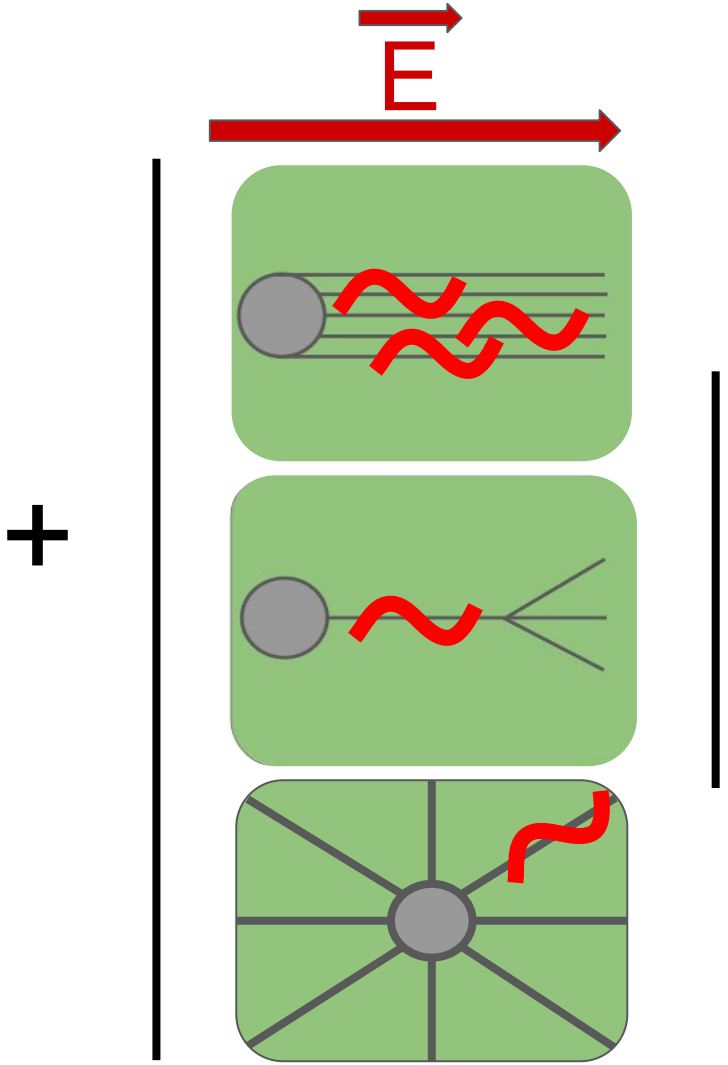
$\mathcal{A}$

$\mathcal{B}$

Power supply:
aliexpress.com

Voltmeter:
ruedespiles.com

picture of C.elegans:
celegans.ulb.ac.be



Parameters :

U : voltage (V)

f : frequency (Hz)

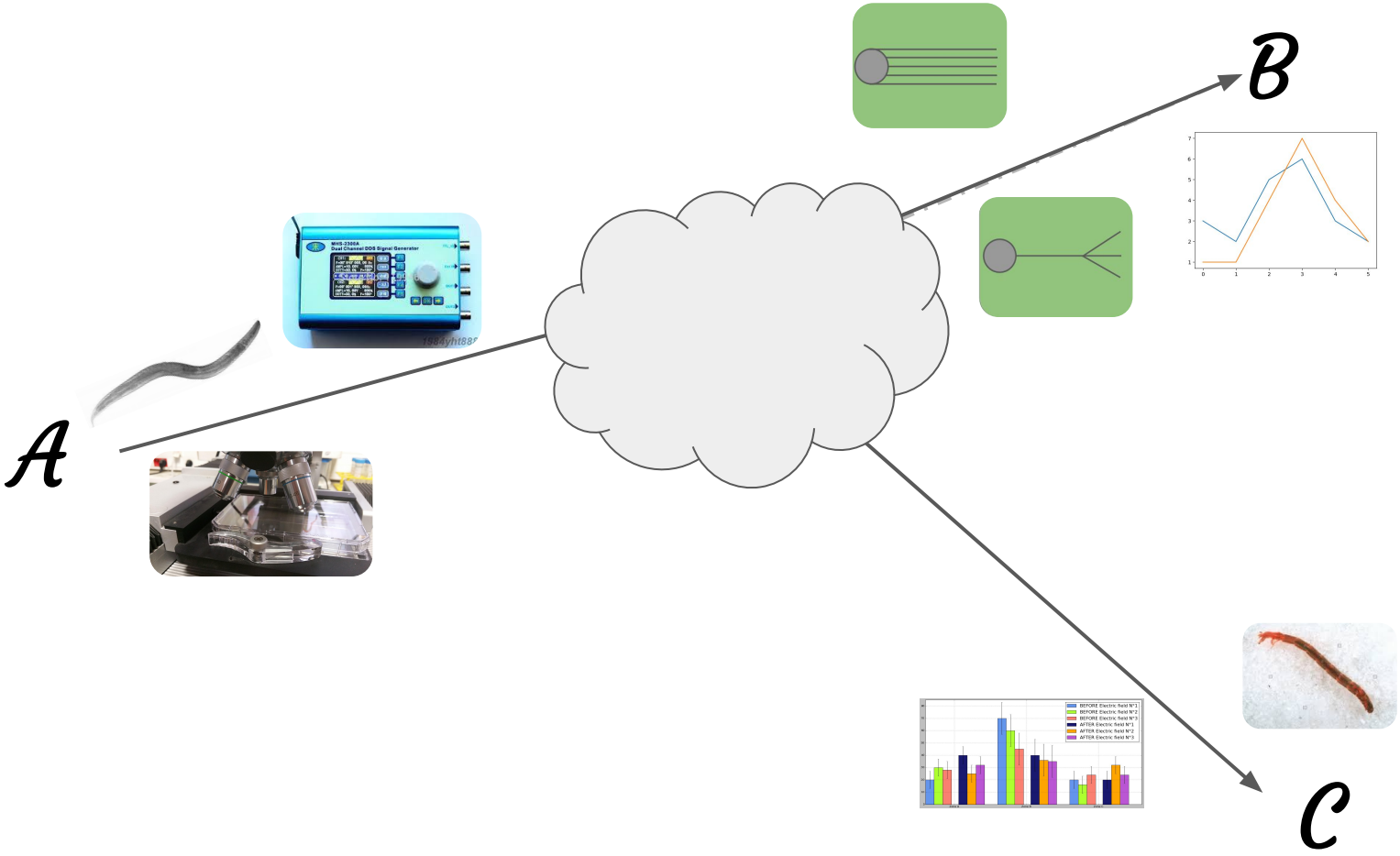
I : intensity (A)

direction

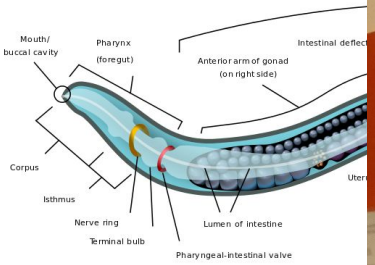
Variables :

speed (µm/S)

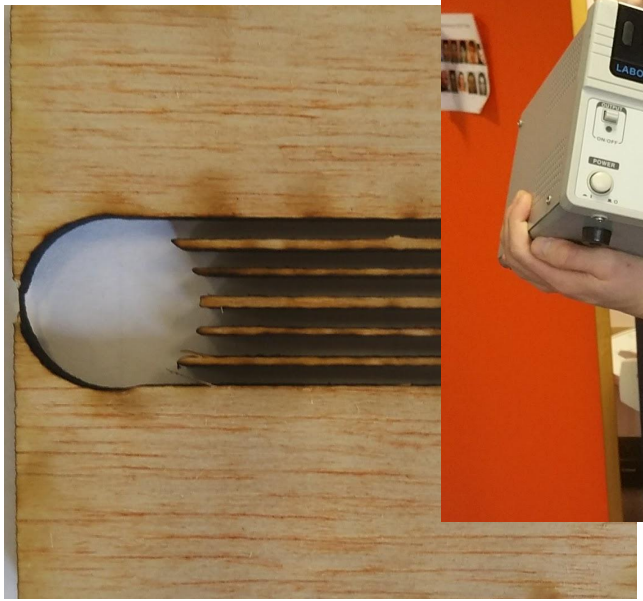
directional sensitivity


A
B
C

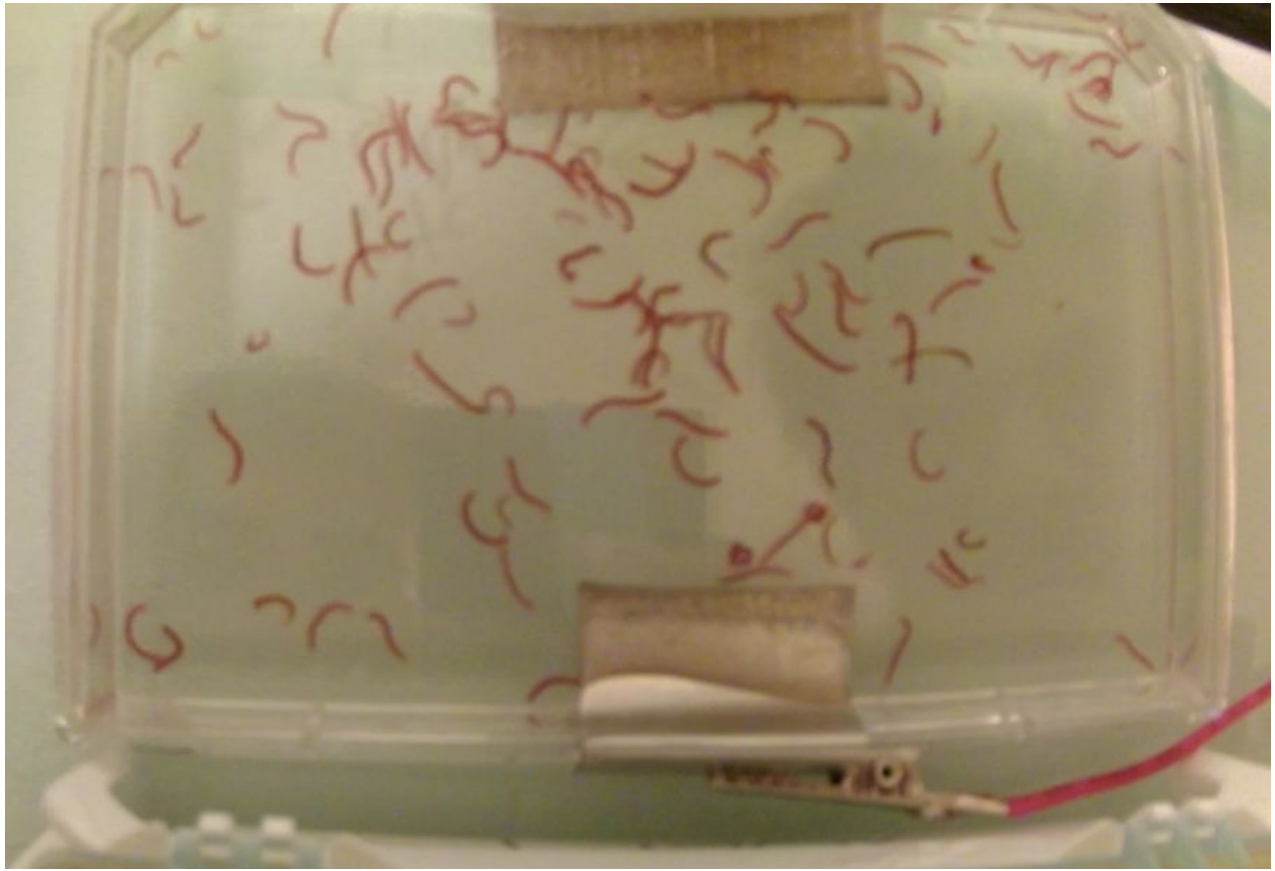
P


Mouth/
buccal cavity
Pharynx
(foregut)
Intestinal deflect
Anterior arm of gonad
(on right side)
Corpus
Isthmus
Nerve ring
Terminal bulb
Lumen of intestine
Pharyngeal-intestinal valve

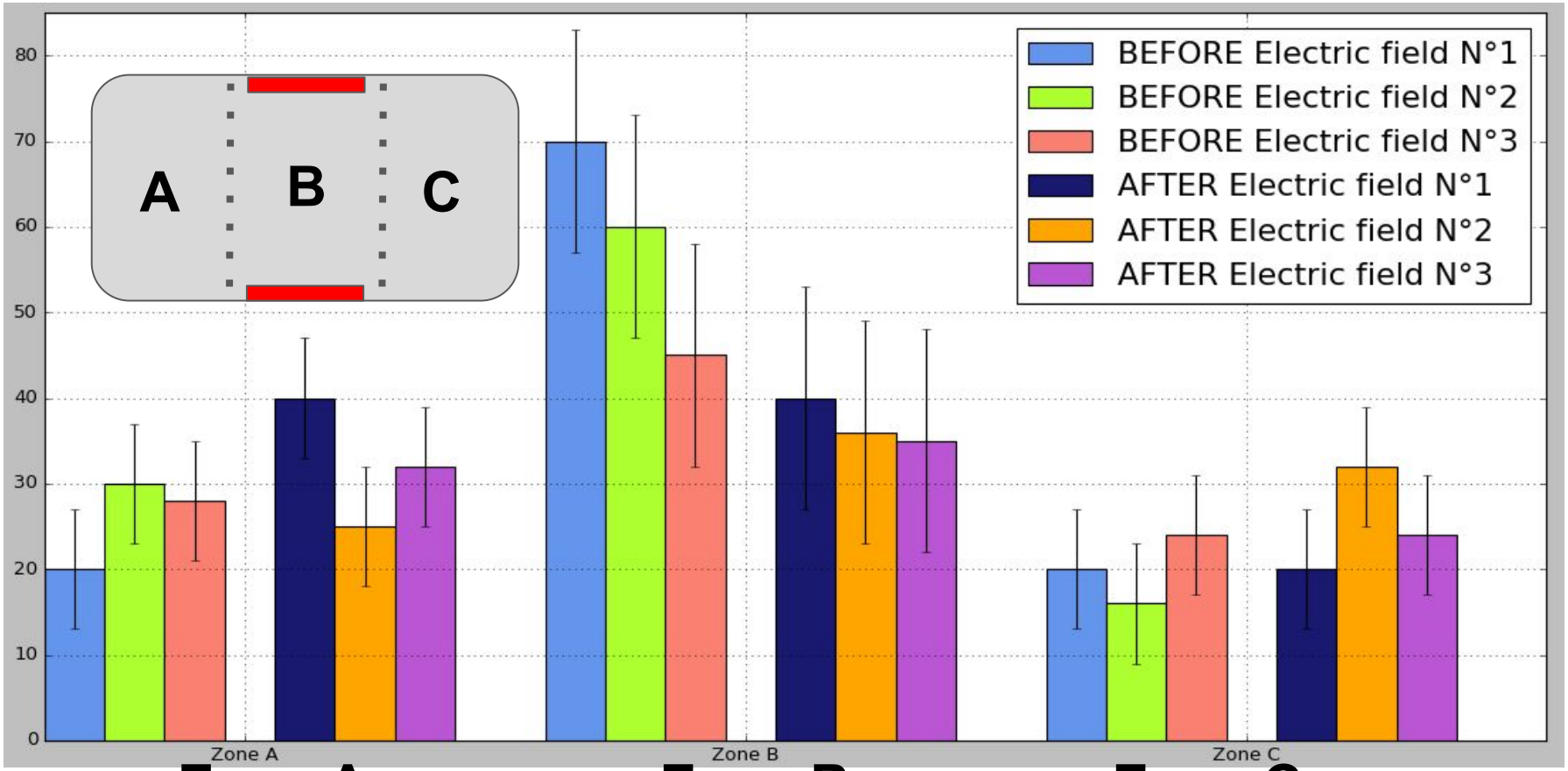

LABORATORY DC POWER SUPPLY
ISO-TECH



Last Protocol:



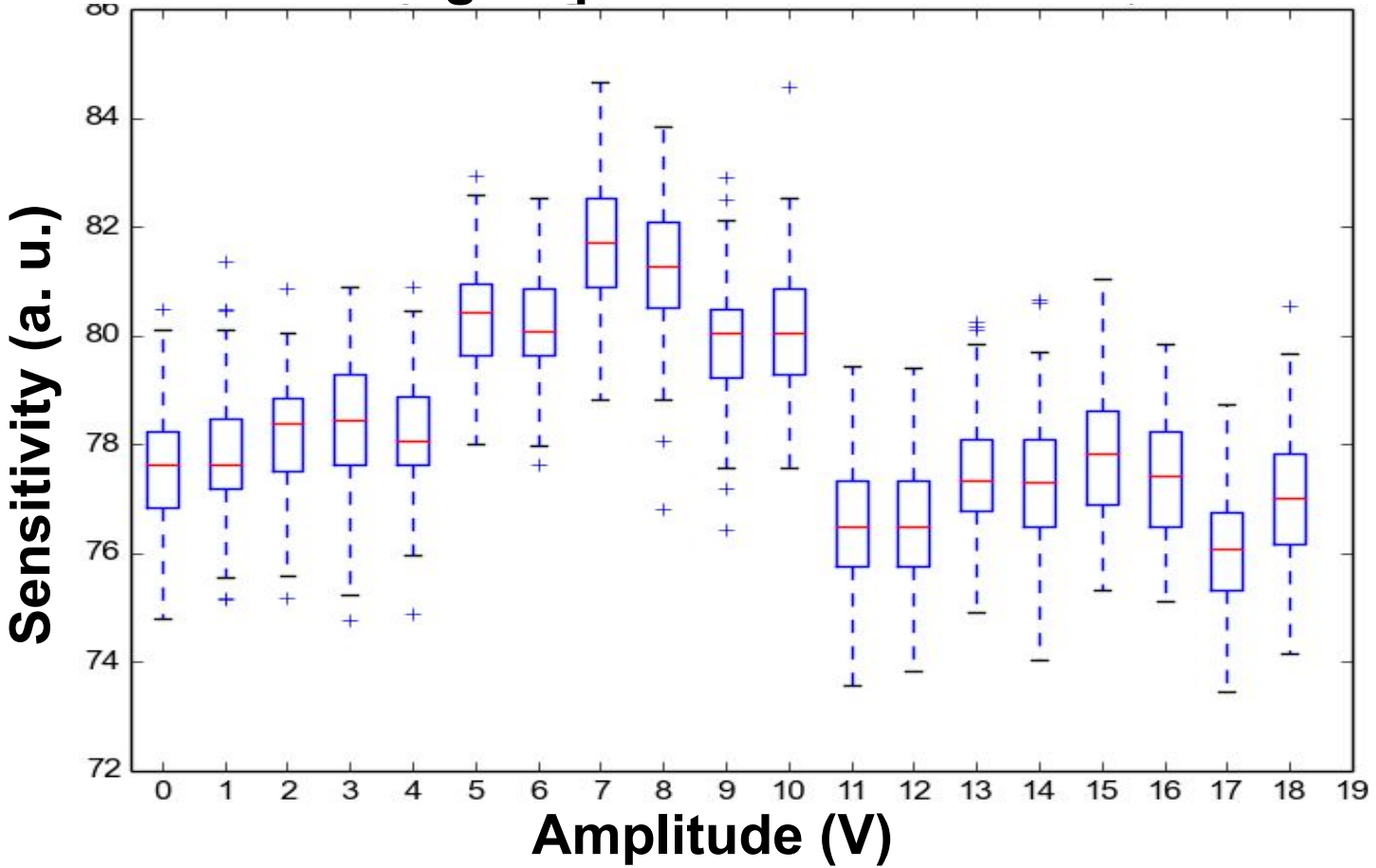
Distribution of the larvae population *Chironomus plumosus* with and without an electric field



Zone A Zone B Zone C

About the electrical sensor :

Sensitivity of a magnetometer exposed to increasing amplitude of an electric field



Conclusion & Perspective

- About Data and results
- Knowledge: how to use materials, simpler protocol, handle electric field
- Re-try the experiment with *C.elegans* with better materials (power supply, materials to catch the worms…)

Acknowledgement and sources

Special thanks to Tamara, Kevin, Ivan and our mentors for their help, implication and cooperation

Thanks for your attention

"**Running Worms: C. elegans Self-Sorting by Electrotaxis**" Xavier Manière,Félix Lebois,Ivan Matic,Benoit Ladoux,Jean-Marc Di Meglio,Pascal Hersen View the 24 /01/17

"Effect of Temperature on Caenorhabditis elegans Locomotion" *Kathleen MacMillan, Dorri Mahdaviani, Dana Matuszewski* view 25/01/17

"Electrotaxis for C.elegans" Pouya Rezai, Asad Siddiqui, Ponnambalam Ravi Selvaganapathy and Bhagwati P. Gupta, view 24/01/17

"Influence of Potential Difference and Current on the Electrotaxis of Caenorhaditis elegans" NC Sukul,Na Croll view 25/01/17

"Effects of Electromagnetic Fields on the Bioluminescence of Dinoflagellates" Ethan H. Y. Chun, Cornell S. L. Chun view 31/01/17

Pictures : Wikipedia.org or by ourself.

Questions : arduino