

Student names: ... (please update)

*Instructions: Update this file (or recreate a similar one, e.g. in Word) to prepare your answers to the questions. Feel free to add text, equations and figures as needed. Hand-written notes, e.g. for the development of equations, can also be included e.g. as pictures (from your cell phone or from a scanner). **This lab is graded.** and needs to be submitted before the **Deadline : 07-06-2019 Midnight.** You only need to submit one final report for all of the following exercises combined henceforth. Please submit both the source file (*.doc/*.tex) and a pdf of your document, zipped file called final_report_extension_name1_name2_name3.zip where name# are the team member's last names. Please submit only one report per team!*

Propose a potential additional study that could be performed in simulation and with the real salamander. This should be written like a research proposal using the questions listed below and should not exceed 2 pages (including figures and references). You are free to choose any topic related to sensorimotor coordination and locomotion of the salamander.

NOTE : The proposal should be just text (possibly with some figures), there is no need to perform the actual numerical experiments!

- 0.1 Provide a scientific question
- 0.2 Formulate a hypothesis corresponding to the scientific question
- 0.3 Describe an experiment in simulation that could be performed to test the hypothesis
- 0.4 Specify which type of simulation (e.g. neural circuits + biomechanics, neural circuits alone, etc.), which level of abstraction, and which assumptions (cf the modeling steps presented in the course)
- 0.5 Specify a corresponding experiment that could be performed with the real animal
- 0.6 Discuss what you expect and what could be learned from those experiments (in simulation and real)
- 0.7 Refer to and include a short bibliography with relevant literature (Example [1])

References

- [1] A. J. Ijspeert, A. Crespi, D. Ryczko, and J.-M. Cabelguen, “From swimming to walking with a salamander robot driven by a spinal cord model,” *science*, vol. 315, no. 5817, pp. 1416–1420, 2007.