

Lab 8

*School of Architecture, Civil and
Environmental Engineering*

EPFL, SS 2018-2019

http://disal.epfl.ch/teaching/signals_instruments_systems/

What this lab is about

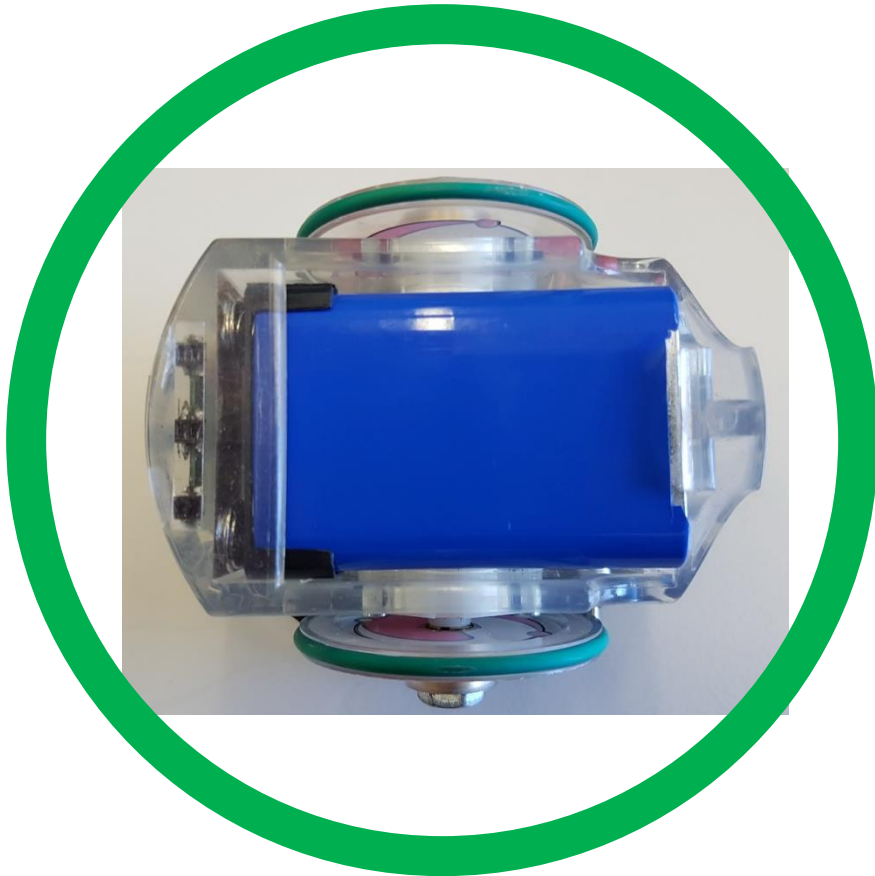
- Familiarize you with the e-puck robot
 - how to program the robot using the e-puck library
 - how to transfer data to and from the robot using serial comm.
- Understanding sensors on a real platform
 - plotting and analyzing sensor data
- Implementation: The e-puck as a mobile node
 - Using the sensor

Hardware

- Everybody will receive:
 - 1 e-puck robot
 - 1 battery
 - 1 USB-Bluetooth dongle

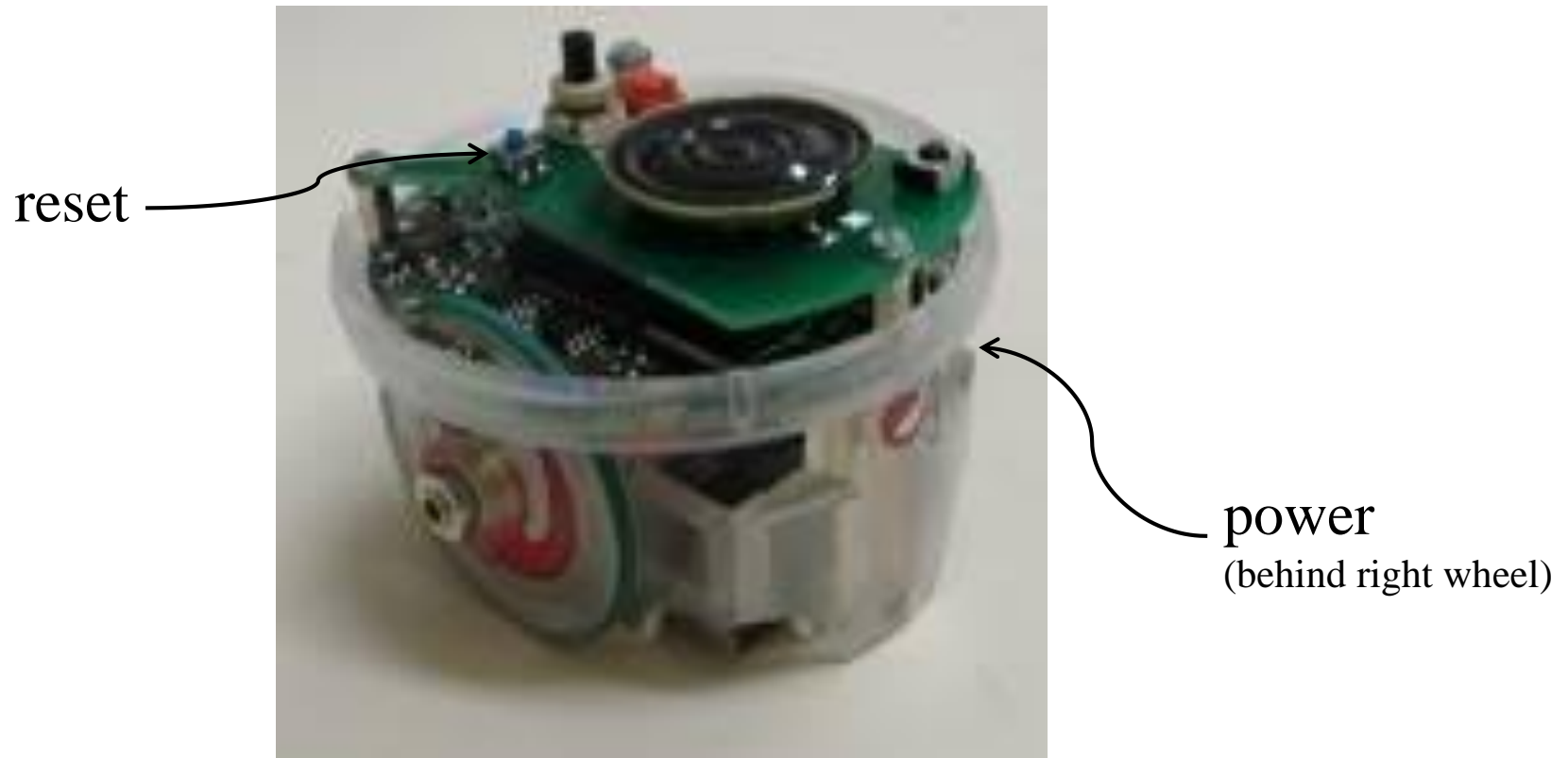


e-puck: insert battery



If you can see the serial number it's wrong

e-puck: Reminder



Also: watch for the power (green) and the low-power LED (red)

Software

- On a git repository
 - download files by executing
`git clone https://disalgit.epfl.ch/epuck/epuck.git`
- Content of folder EpuckDevelopmentTree/
 - e-puck library
 - test programs (not needed in this lab)
- Executables: already installed in GR B0 01
 - epuckconnect
 - epuckupload

Programming the e-puck

- Turn on robot, plug USB dongle into computer
- Connect computer to e-puck 123:

```
epuckconnect 123
```

- Upload program abc.hex

```
epuckupload -f abc.hex 123
```

- Remember:

Before compiling a C file (abc.c), edit your Makefile:

```
EPUCKLIBROOT=/home/user/Desktop/MyFiles/epuck/EpuckDevelopmentTree/library
```

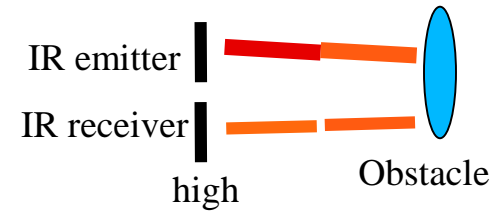
Hint for this lab

We will not be able to lend you the hardware!

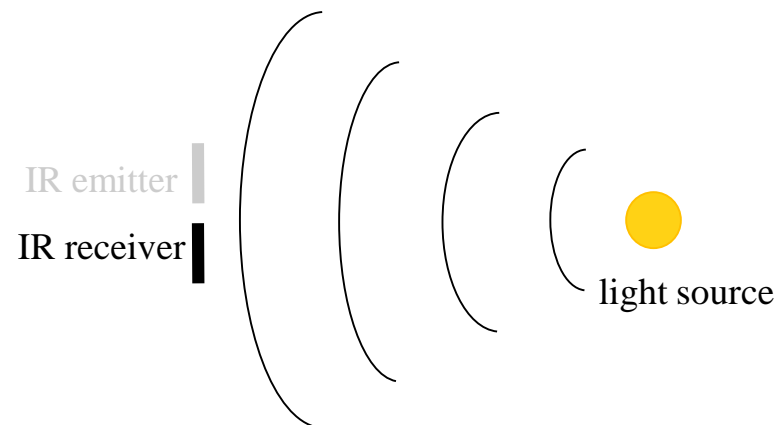
- Do as many of the exercises which require the robot hardware in the lab session

IR sensors

- As proximity sensor



- As light sensor



Collision avoidance

- For last question – rule based collision avoidance:
 - Threshold on IR sensors

