

## ISR Mini-Explorer: Odor

The ISR Mini-Explorer is equipped with two odor sensors (BME680) placed exteriorly to each of the wheels. Using both sensors the robot is capable to locate an odor source.

If odor is being released in an environment without wind it distributes creating a gradient towards the odor source position.

While the robot is moving in such environment it is constantly analysing the odor concentration to calculate the concentration ratio between its left and right sensors. If that ratio is between 45% and 55% the robot moves forward, if it is biased to the right the robot turns to that direction and vice versa.

The robot keeps this behaviour trying to align with the threshold until it detects an odor concentration over a set threshold where it declares that the odor source was found.

