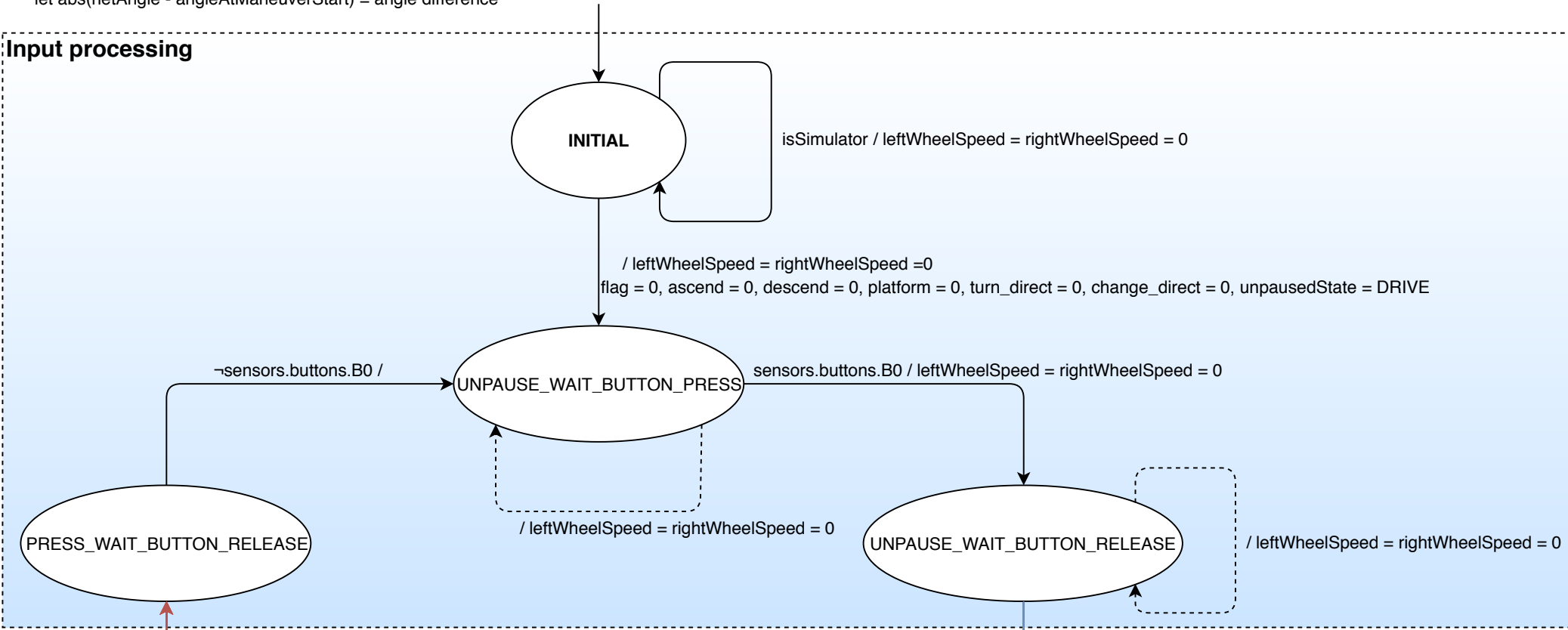


```
unpausedState = {DRIVE, FINAL, STOP,
BACK, FORWARD,
LEFT, RIGHT,
TURN_BL, TURN_BR,
Determination State 1,
Determination State 2,
Determination State 3,
Determination State 4,
Determination State 5};
```

Input processing



The diagram illustrates a state machine for a robot's control system, organized into three main regions: Run Region, Obstacles and cliffs avoidance, and Redirection.

Legend:

- $\neg$ sensors.buttons.B0 / $\neg$ unpausedState = DRIVE / (Blue)
- sensors.buttons.B0 / unpausedState = FINAL (Red)
- sensors.buttons.B0 / unpausedState = STOP / (Blue)
- sensors.buttons.B0 / unpausedState = BACK / (Red)
- sensors.buttons.B0 / unpausedState = DETERMINATION STATE 1 / (Blue)
- sensors.buttons.B0 / unpausedState = DETERMINATION STATE 2 / (Blue)
- sensors.buttons.B0 / unpausedState = LEFT / (Red)
- sensors.buttons.B0 / unpausedState = RIGHT / (Red)
- sensors.buttons.B0 / unpausedState = DETERMINATION STATE 3 / (Blue)
- sensors.buttons.B0 / unpausedState = DETERMINATION STATE 4 / (Blue)
- sensors.buttons.B0 / unpausedState = FORWARD / (Red)
- sensors.buttons.B0 / unpausedState = DETERMINATION STATE 5 / (Blue)
- sensors.buttons.B0 / unpausedState = TURN_BR / (Blue)
- sensors.buttons.B0 / unpausedState = TURN_BL / (Blue)

Run Region:

- DRIVE:** Transitions to **DETERMINATION STATE 1** based on inclination coefficient and platform status. Transitions to **BACK** based on distance difference and wheel speed.
- DETERMINATION STATE 1:** Transitions to **BACK** based on bump or cliff sensors and turn direction.
- BACK:** Transitions to **DETERMINATION STATE 2** based on distance difference and wheel speed.
- DETERMINATION STATE 2:** Transitions to **LEFT** or **RIGHT** based on angle difference and wheel speed.
- LEFT:** Transitions to **DETERMINATION STATE 3** based on angle difference and wheel speed.
- RIGHT:** Transitions to **DETERMINATION STATE 4** based on angle difference and wheel speed.
- DETERMINATION STATE 3:** Transitions to **FORWARD** based on flag and sensor inputs.
- DETERMINATION STATE 4:** Transitions to **FORWARD** based on flag and sensor inputs.
- FORWARD:** Transitions to **DETERMINATION STATE 5** based on distance difference and wheel speed.
- DETERMINATION STATE 5:** Transitions to **FORWARD** based on sensor inputs.
- TURN_BL:** Transitions to **TURN_BR** based on angle difference and wheel speed.
- TURN_BR:** Transitions to **TURN_BL** based on angle difference and wheel speed.

Obstacles and cliffs avoidance:

- BACK:** Transitions to **DETERMINATION STATE 2** based on distance difference and wheel speed.
- LEFT:** Transitions to **DETERMINATION STATE 3** based on angle difference and wheel speed.
- RIGHT:** Transitions to **DETERMINATION STATE 4** based on angle difference and wheel speed.

Redirection:

- TURN_BL:** Transitions to **TURN_BR** based on angle difference and wheel speed.
- TURN_BR:** Transitions to **TURN_BL** based on angle difference and wheel speed.

