

# Proportional Integral Derivative Control for Heating Blowout Temperature

Automatic control with script function written in JavaScript

## Abstract

### How to keep the room temperature constant ?

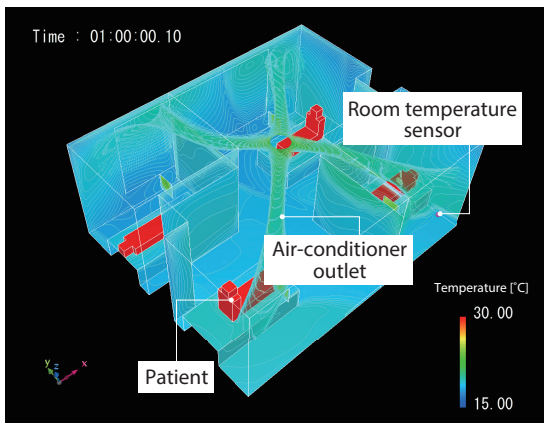
This is the question which often occurs not only in the real case, but also in the simulation. In the real case, automatic control, such as PID control, is introduced. This simulation example also uses the same logic of script function to adjust the heating blowout temperature referring to the current room situation.



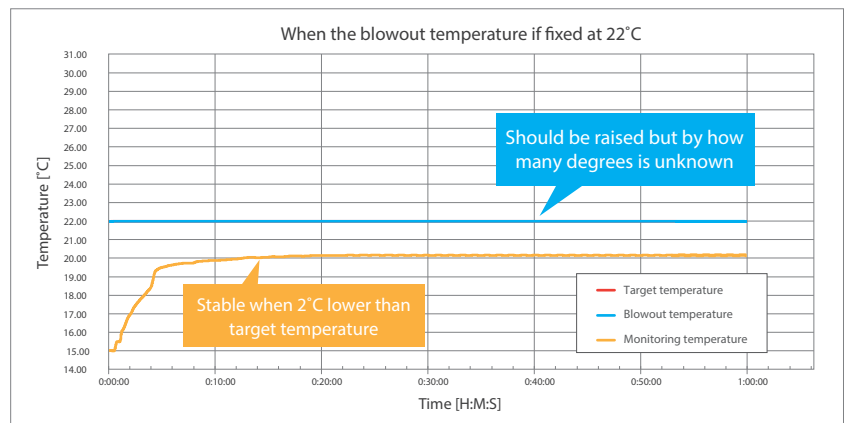
### PID (Proportional Integral Derivative) Controller

The feedback logic which determines the output referring to the difference between the value representing the current situation (in this example, the monitoring room temperature) and the target value (temporarily / historically). This is used in a variety of fields such as air conditioning and motion control of motors and robots.

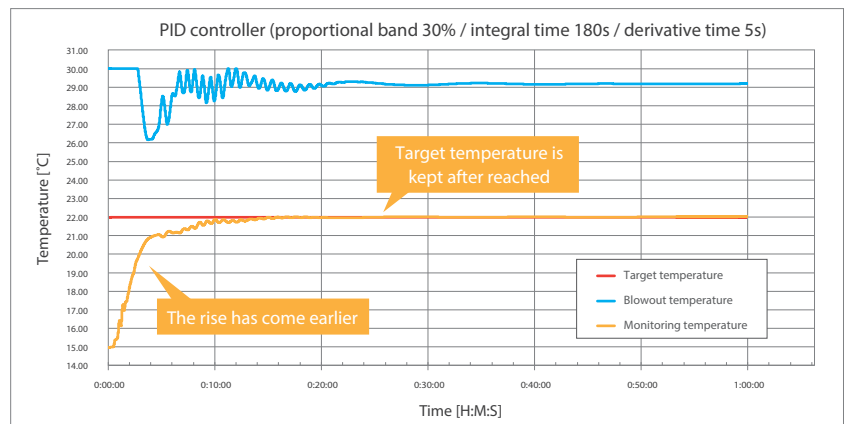
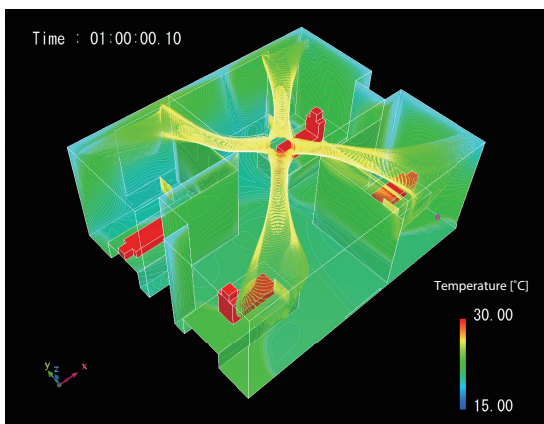
### Reference case: without PID (fixed at 22°C)



Hospital ward in winter time  
(an hour after air-conditioner is switched on)



### User case: with PID



## Notes

- Script function which emulates PID controller enabled the automatic control for the heating blowout temperature.
- User-defined function can also work in the same manner, but script function has its own benefits, such as that the compilation environment such as Visual Studio is not necessary and expertise on parallel programming is not needed in principle.