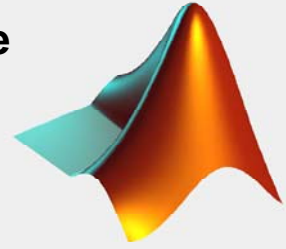




# Evaluation of Generalised Predictive Control versus PI Control

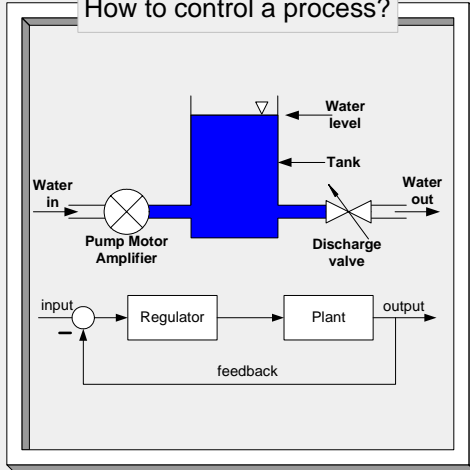


Daniel Czarkowski Dr. Tom O'Mahony

Advanced Control Group  
Department of Electronics Engineering,  
Cork Institute of Technology,

e-mail: dczarkowski@cit.ie , tomahony@cit.ie

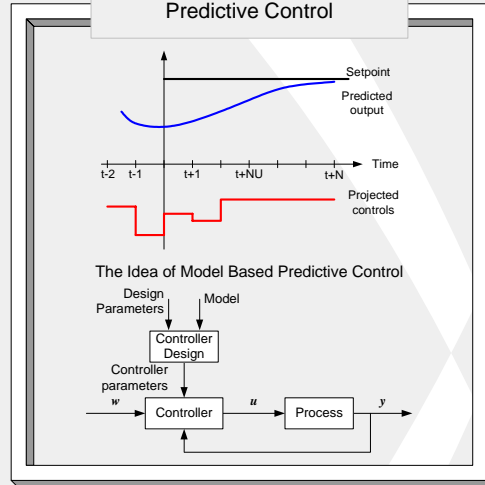
## How to control a process?



## Introduction

At the beginning of the new millennium, the proportional, integral and derivative (PID) controller remains by far the most dominant form of feedback controller in use today. Plenty of tuning techniques and years of research have resulted in improved understanding and enhanced controller performance, though the basic structure remains the same. This research proposes to compare a well-tuned PID controller with a more advanced structure, namely the generalised predictive controller of Clarke *et al.* (1987).

## Predictive Control

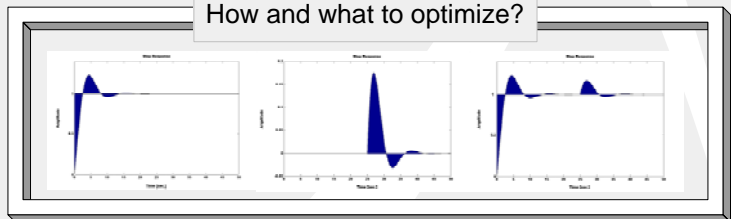


## How The Genetic Algorithm works?

- 1 Initial population
- 2 Select individuals for mating
- 3 Mate individuals to generate offspring
- 4 Mutate offspring
- 5 Insert new individuals into population
- 6 Are criteria satisfied?
- 7 End of searching



## How and what to optimize?



## Simulation Study

