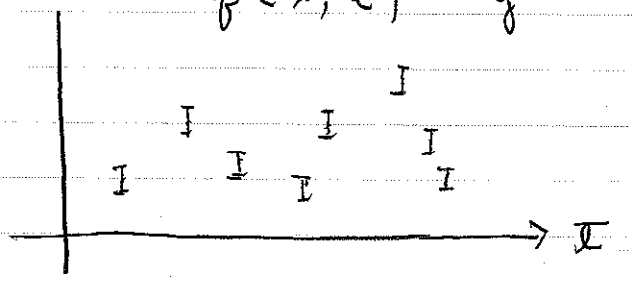
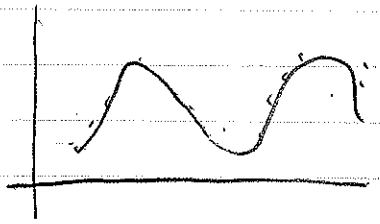
$f(x, t) = y$ 10/9/18



Most people do:



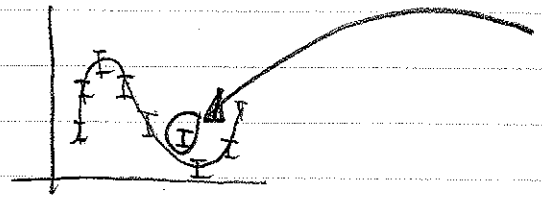
$$\min_{x} \sum_{i=0}^{N} \left(f(x, t_i) - \tilde{y} \right)^2 = S$$

LSM = Least Square Method.

↓

Values of x such that S is minimum.

This is a good method, but [!]



Can be the case where the sum is minimum, but doesn't satisfy hard constraints

Although works for L.S.M

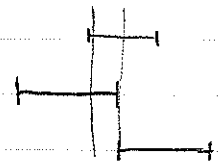
$f(x, t) = y$ → Constraint $\forall i$: $f(x, t_i) \in [\tilde{y}_i - \Delta, \tilde{y}_i + \Delta]$

inverse problem.

parameter estimation

10/9/18

Constraint Programming



modeling
- Variables
- Domains for the variables (this makes it discrete or continuous)
- Constraints

If you can quantify: discrete.
If not: is continuous.

↓

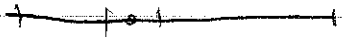
Solutions

real power

- Continuous domains. ⇒ quasi-solutions
- I want to solve this problem with this accuracy.

B Bound.

issues: Continuum - non-solutions

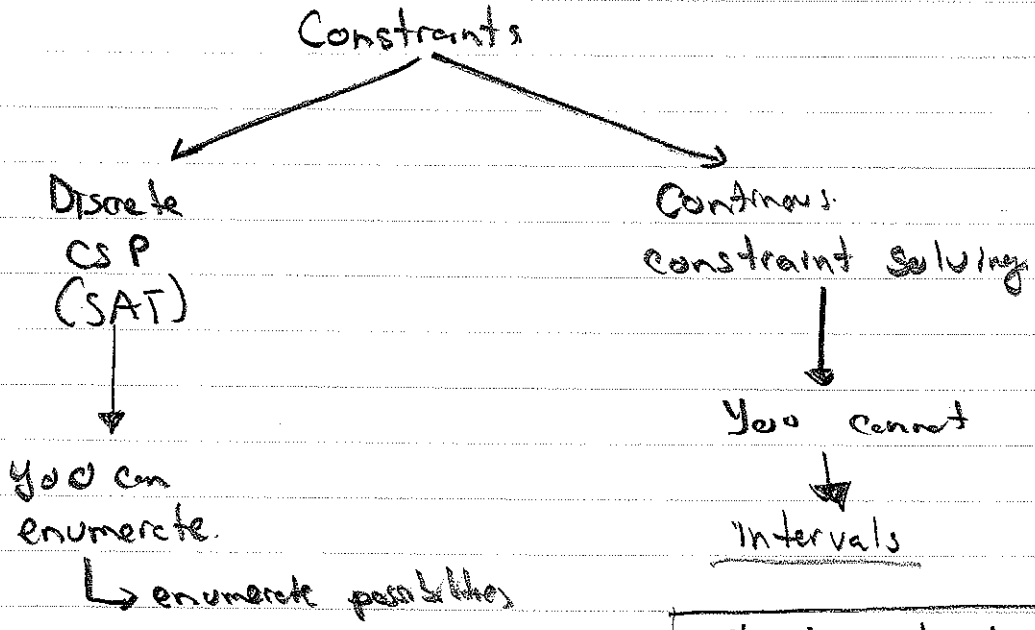


☑ Floating-point :— simulations or physics situation.

Simulated it so later product it

For some problems is good to is floating points and others not. If you use, be aware about you expose.

10/9/8



all solvers to solve cont. const are based on Intervals.

⚠ Intervals can't be efficient sometimes.

Interval arithmetic :- over estimates.

e.g. $X - X \neq 0 \quad X \in [0,1]$

$X - X = [-1, 1]$

Next Time: How to use the solving methods