University
of Basel

In association with:

SCCER **CREST**

Optimization models

The 2 elements of optimizations

Objective:

- What to optimize?

Constraints:

- What to take into account?

Example

Objective:

$$Min\ Costs = \sum_k c_k q_k$$

Constraints:

$$q_k \leq q_k^{max}$$

$$\sum_k q_k \geq dem$$

The objective

Single(!) target

to be maximized or minimized
(i.e. a company's costs or profit, or the overall system costs)

The constraints

≤   Upper limits
     (i.e. production/transport capacities,
     emission restrictions)

≥   Lower limits
     (i.e. minimum output, legal requirements)

=   Definitions and balances
     (i.e. flow balances, technical definitions)

Optimization models

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- What to optimize?

Constraints:

- What to take into account?