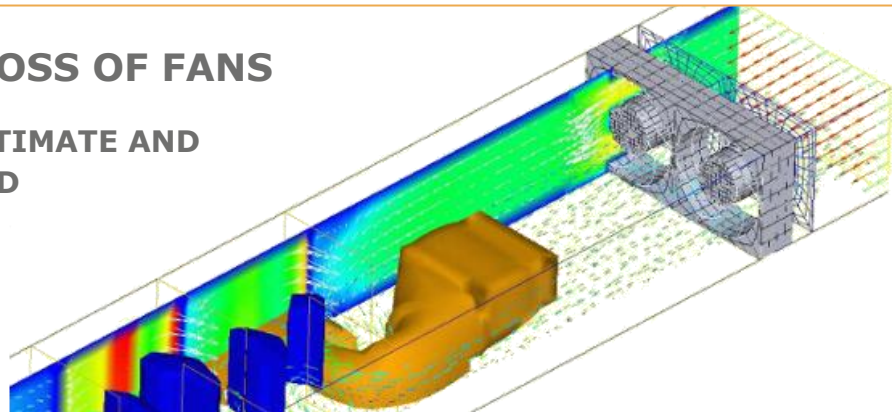


THE POWER LOSS OF FANS

**DIFFICULT TO ESTIMATE AND
 OFTEN NEGLECTED**



The road to power loss involves the operating point of a fan's individual characteristic line.

Advantages of simulation over measurements:

All possible variants and relevant conditions can be analyzed, regardless of the physical object and its location. That way, current values and the cause and effect of single variants can quickly be visualized, analyzed, and optimized.

Conclusions regarding the actual fan performance - including heat loss - are difficult to draw in changing conditions and without an extensive analysis of the operating point. That's why it's often being neglected.

The simulation of fans allows an accurate mapping of fan types and their characteristics, such as

- geometry (three-dimensional),
- fan spin,
- rotation speed,
- power loss,
- pressure-volume characteristic curve,
- installation conditions,
- control (e.g. temperature),
- component and system integration.

Flow resistances can be simulated quickly and with sufficient precision, and the operating point of a fan can be determined and then read out by appropriate CFD tools.

Relevant parameters for the thermal balance are being defined by the obtained fan data and the determined operating point. Information on operating states, efficiency, and flow fields is useful for a strategic selection of fan types in system integration, and facilitates the adjustment and optimization of entire systems.

