Bionic optimization of metal forming processes

- An overlay process initiates the forming analyses and suggests improvements.
- Significant time and material savings in the development of new production lines.

Optimization procedure

Optimizer
- Evolutionary algorithm
- Particle Swarm
- Fern

Design suggestions
Modifications
Simufact simulation
Results estimation
Results reading

Support the optimization with meta-model

Requirements for the pressure test

End of manufacturing
\[ p > 18 \text{ bar} \]

\[ p > 21.6 \text{ bar} \]

Fitness convergence

Bionic optimization optimum
Meta-model optimum

Can mass [g]

Can mass [g]

Variants (simulation runs)

20% material savings and reduced development time
25% faster optimization through the meta-model
=> simulation saves time and money on a large scale

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