



Hannover Messe 2018

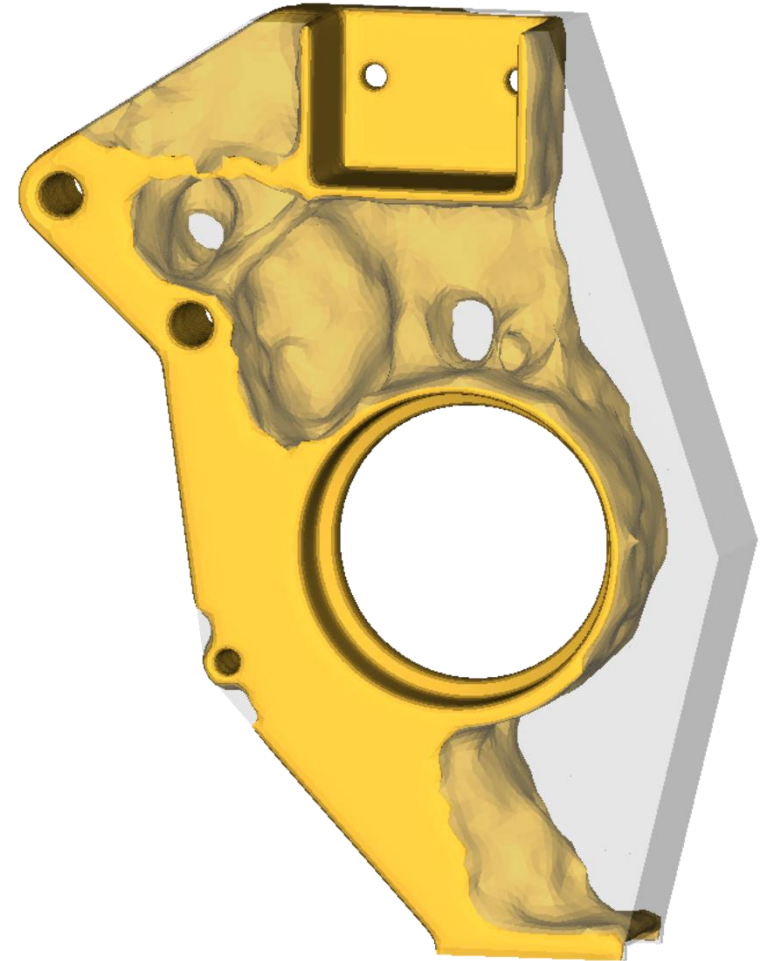


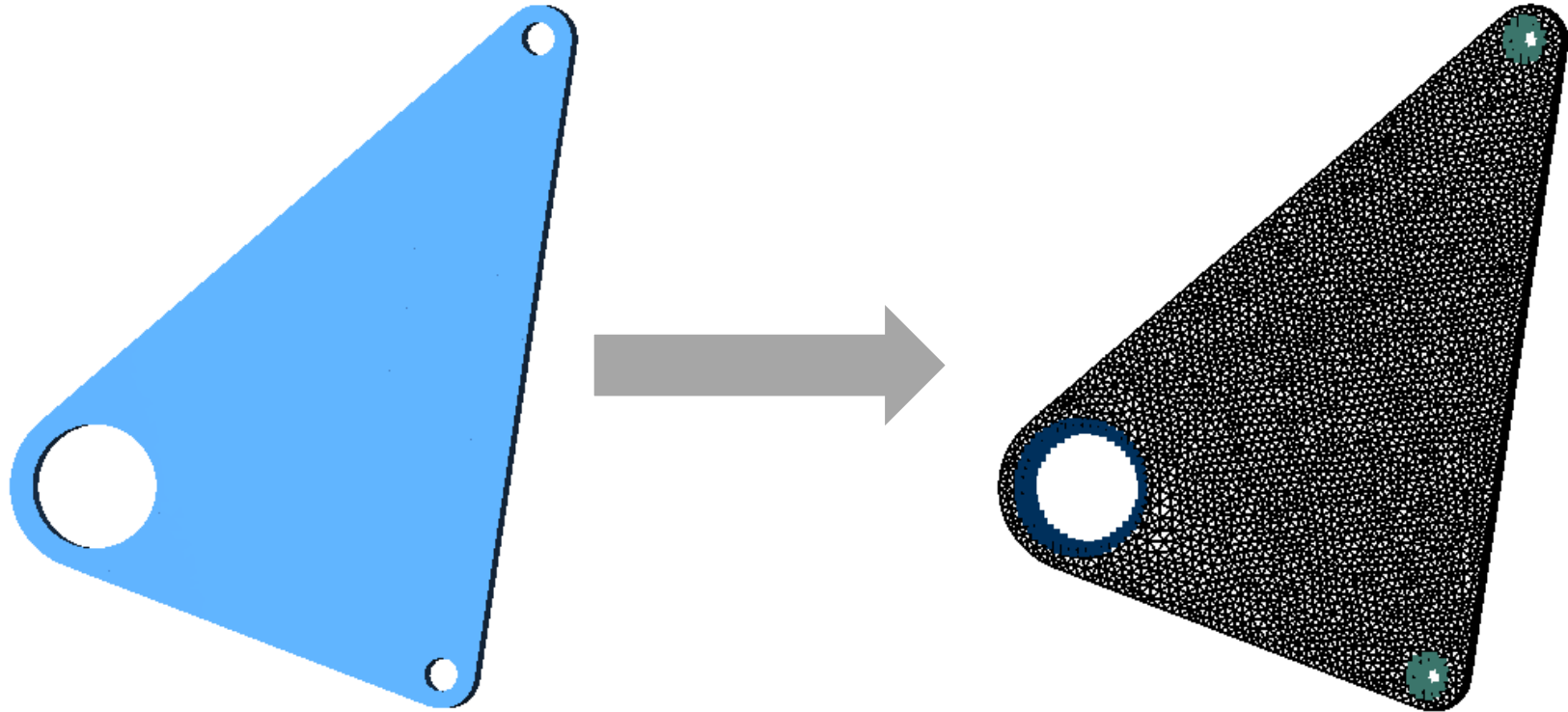
## Topologieoptimierung

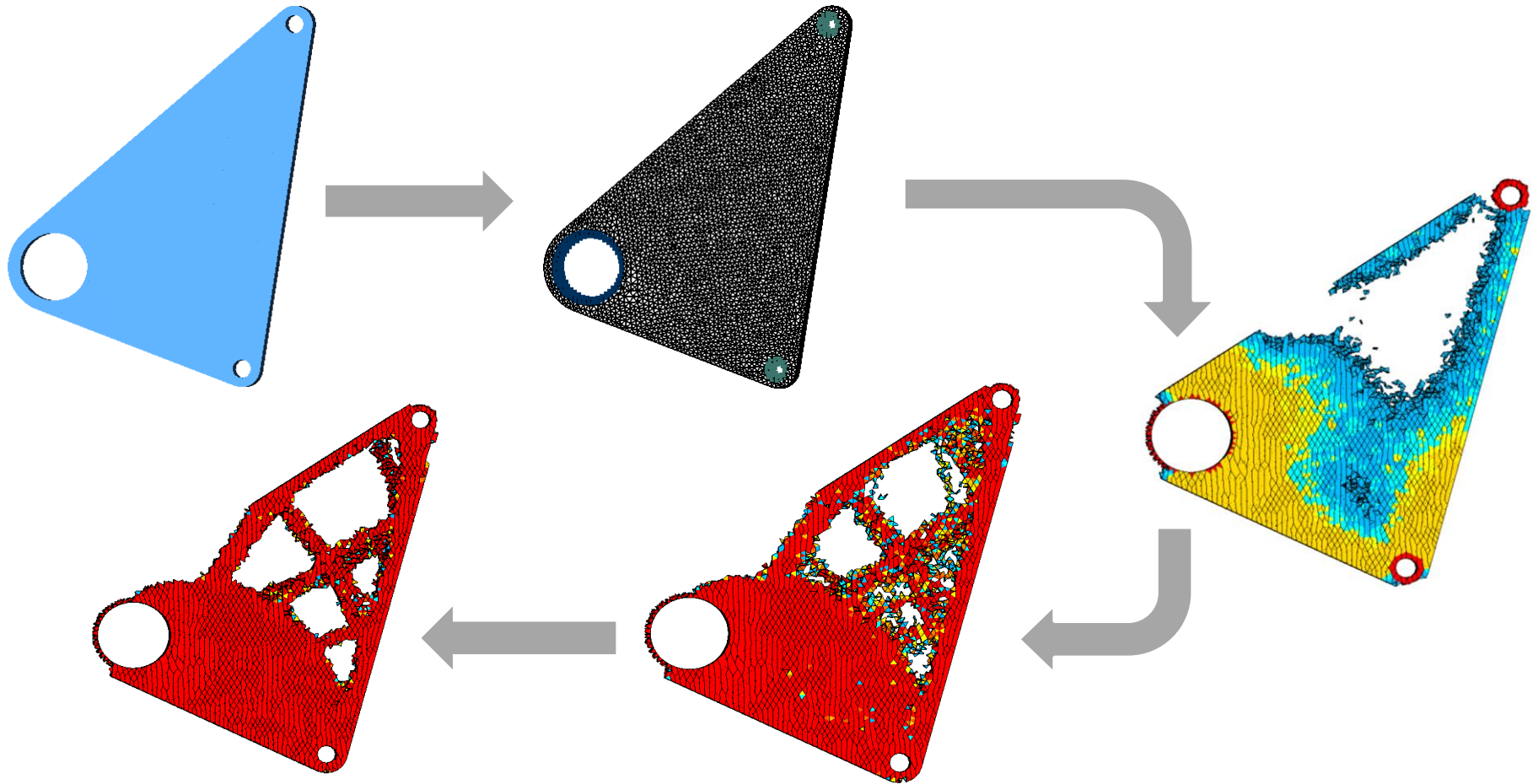
- Minimierung einer Zielfunktion
- durch Veränderung der Struktur

## Zielfunktionen

- Steifigkeit
- Festigkeit
- Durchbiegung
- Gewicht
- etc.

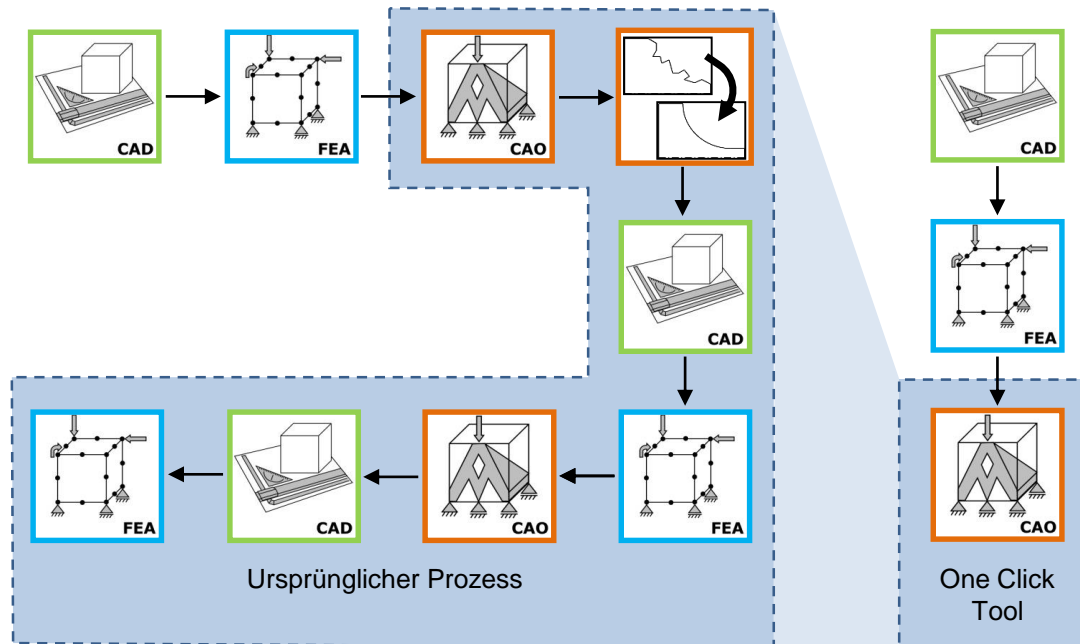








Z88Arion wird von der Europäischen Union über den Europäischen Fond für regionale Entwicklung (EFRE) gefördert.



# OPTIONEN



**Europäische Union**  
Europäischer Fonds für  
regionale Entwicklung



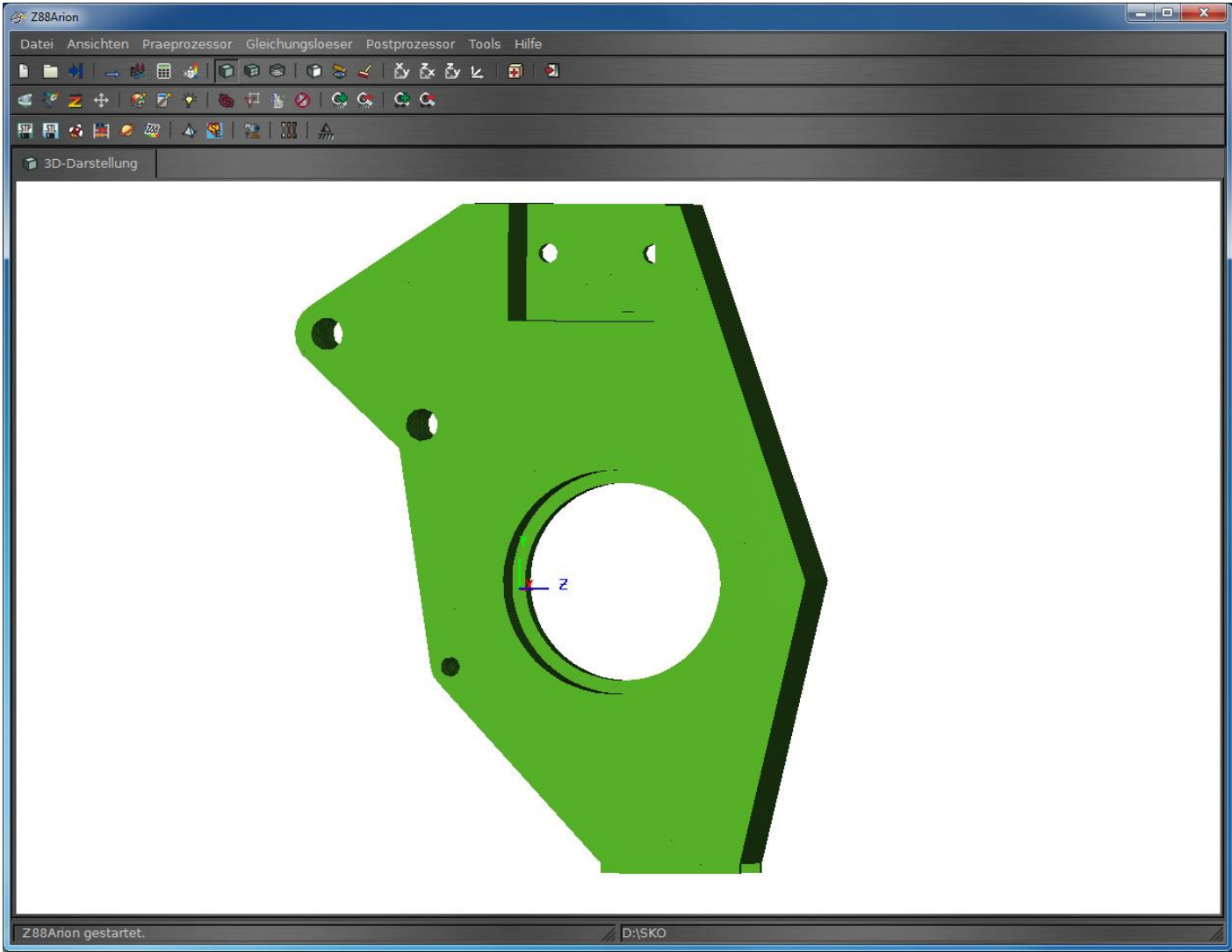
## Optimierungsverfahren

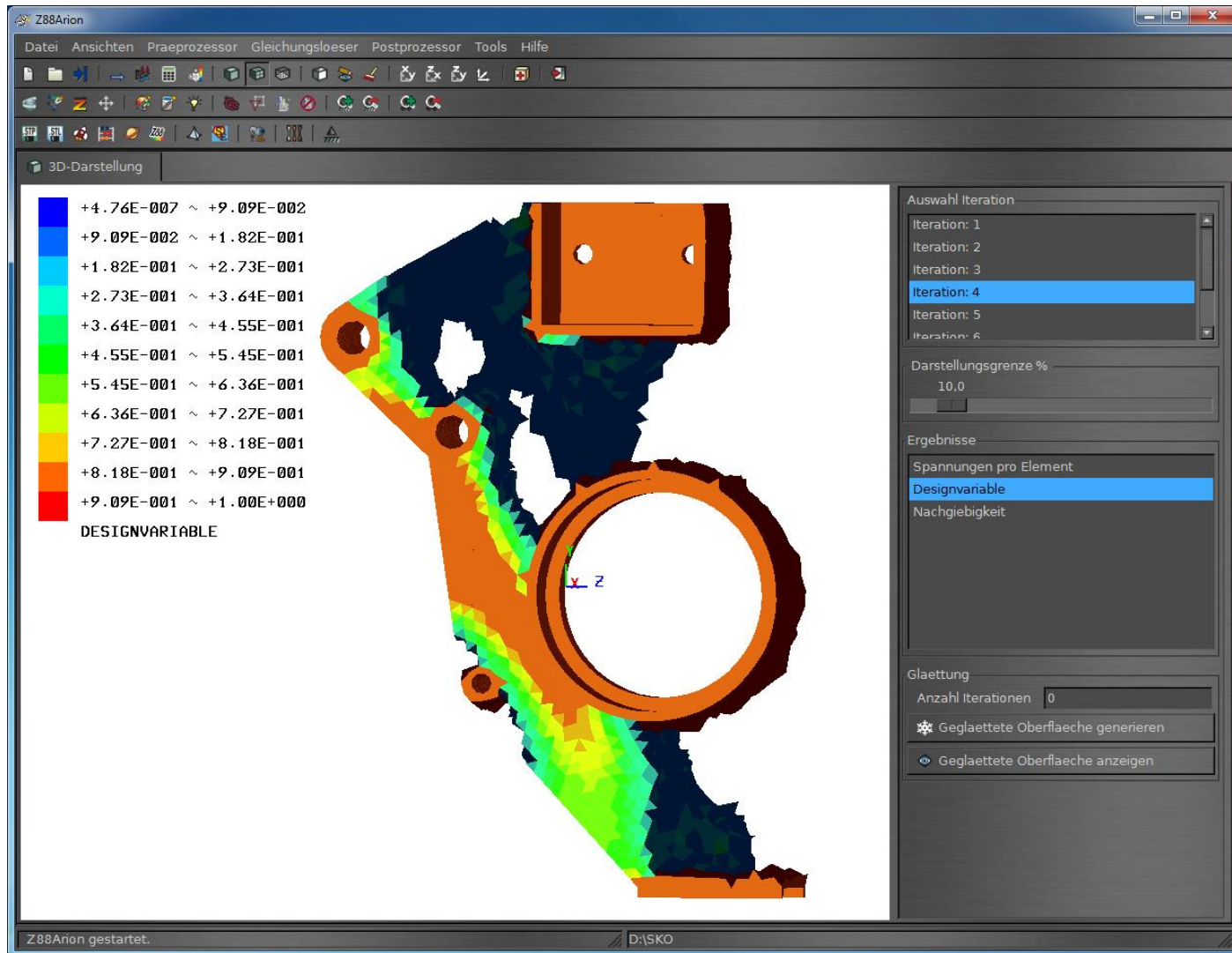
- Optimalitätskriterien (OC)
- Topology Optimization for Stiffness and Stress (TOSS)
- Soft Kill Option (SKO) **Neu in V2**

## Weiteres

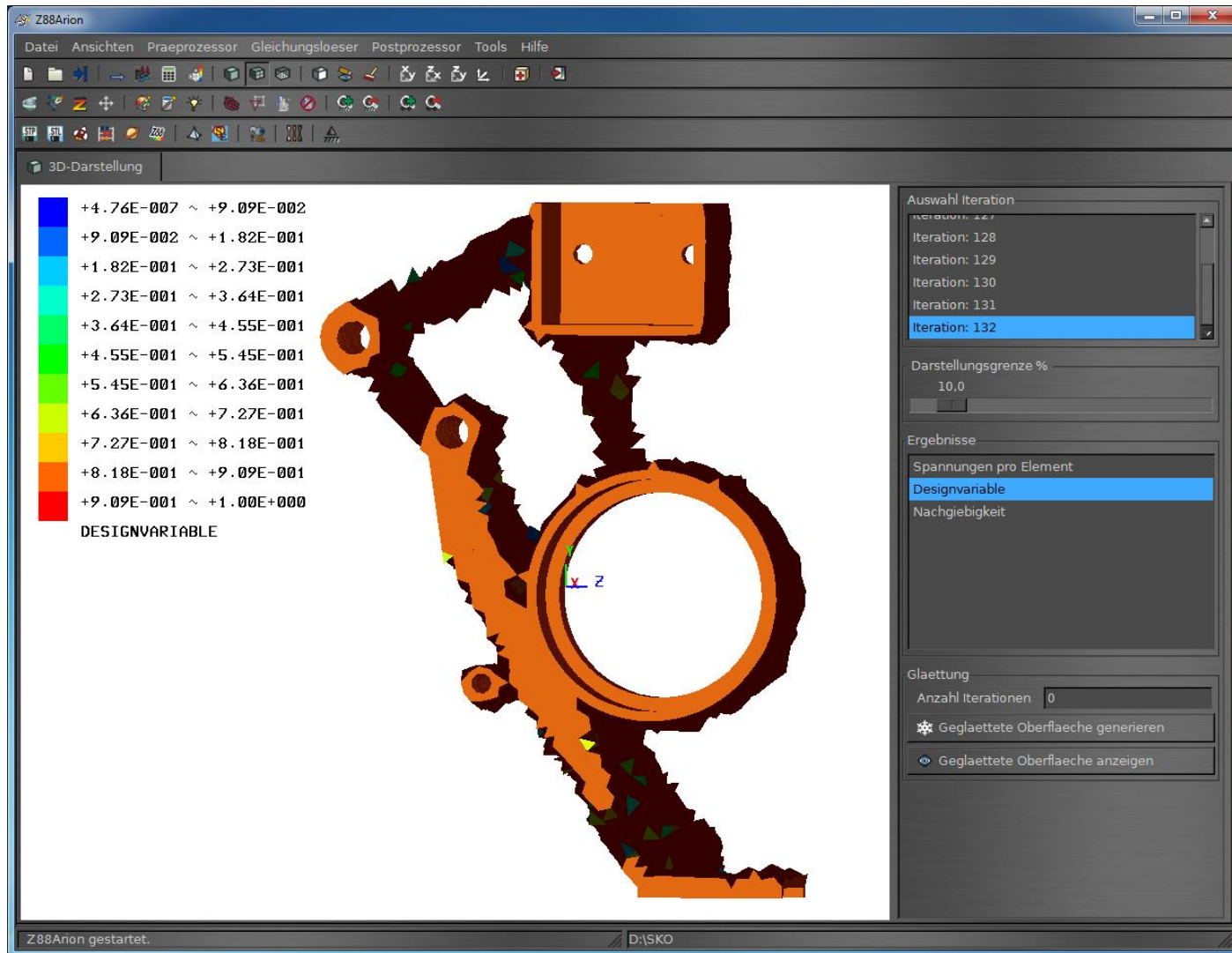
**Neu in V2**

- Zwei-Schritt Glättung
- STL Export
- Direkte Schnittstelle zu Z88Aurora







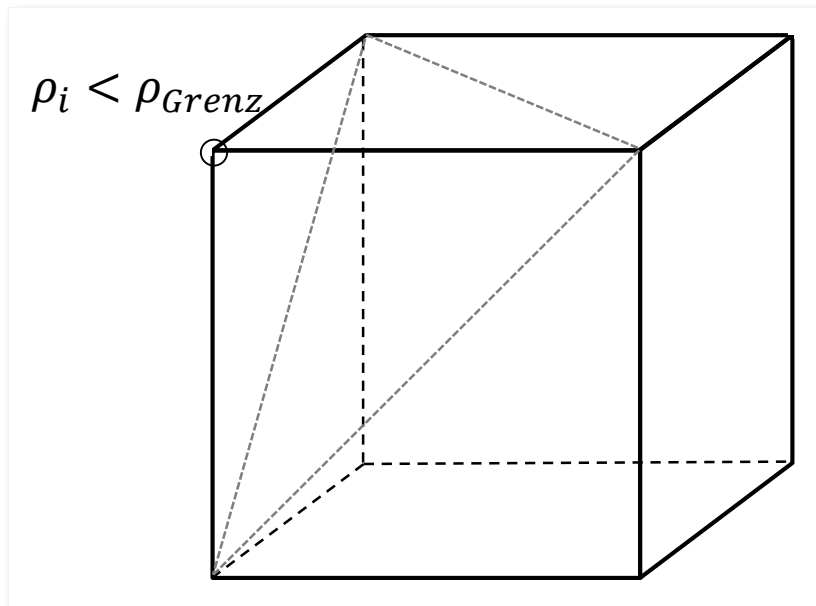




Das Verfahren besteht aus **zwei** Schritten

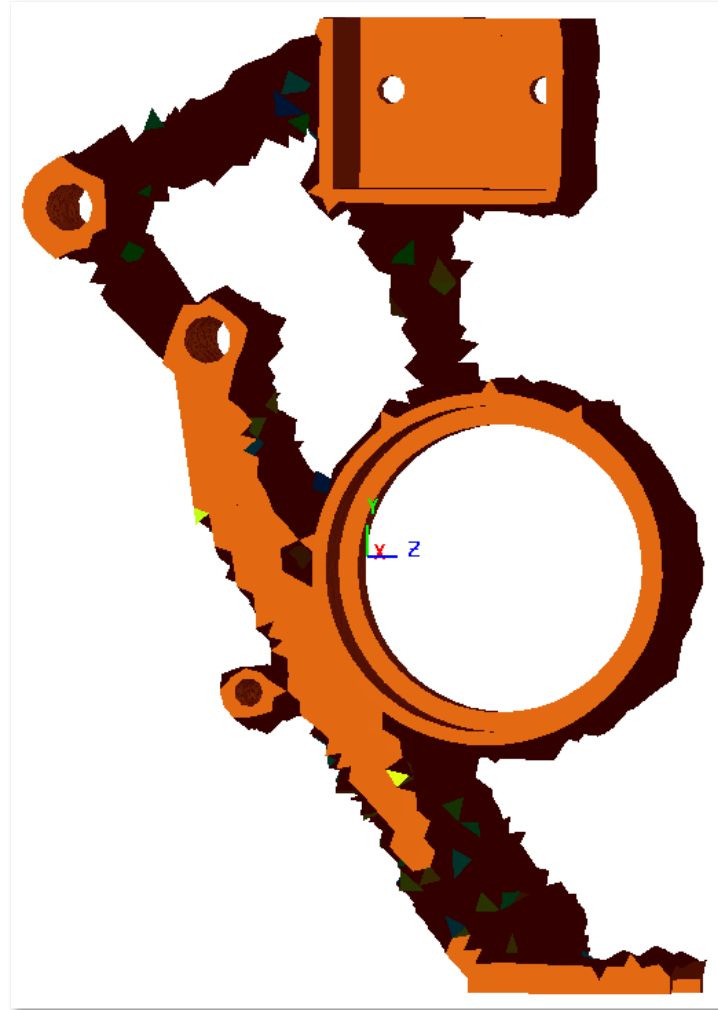
1. Schritt

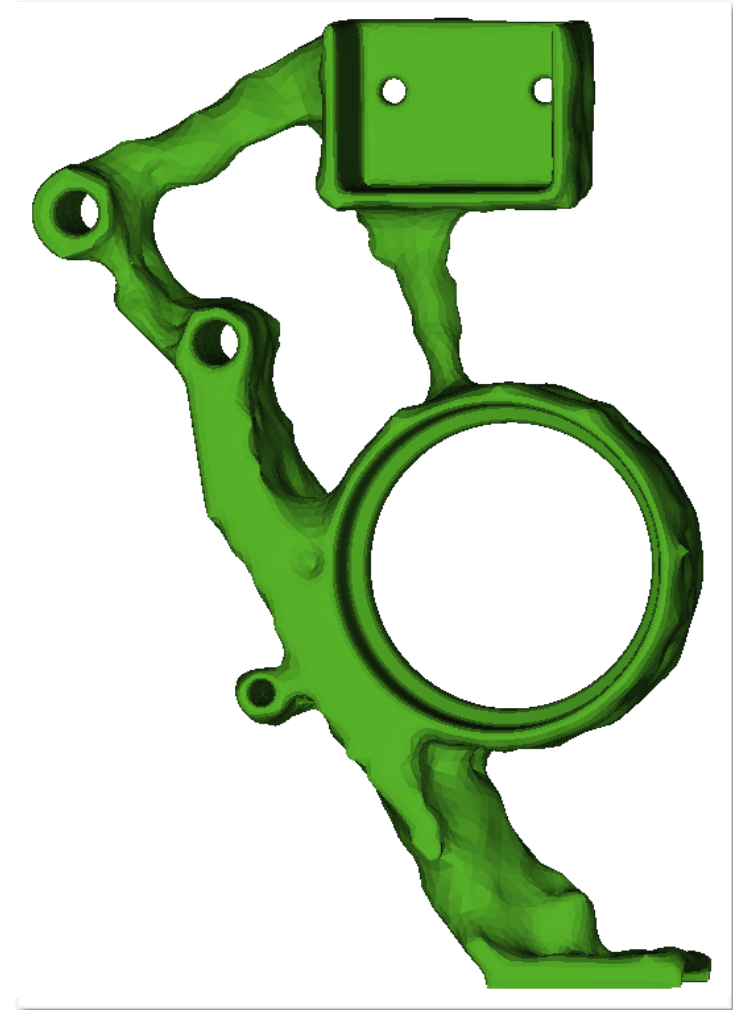
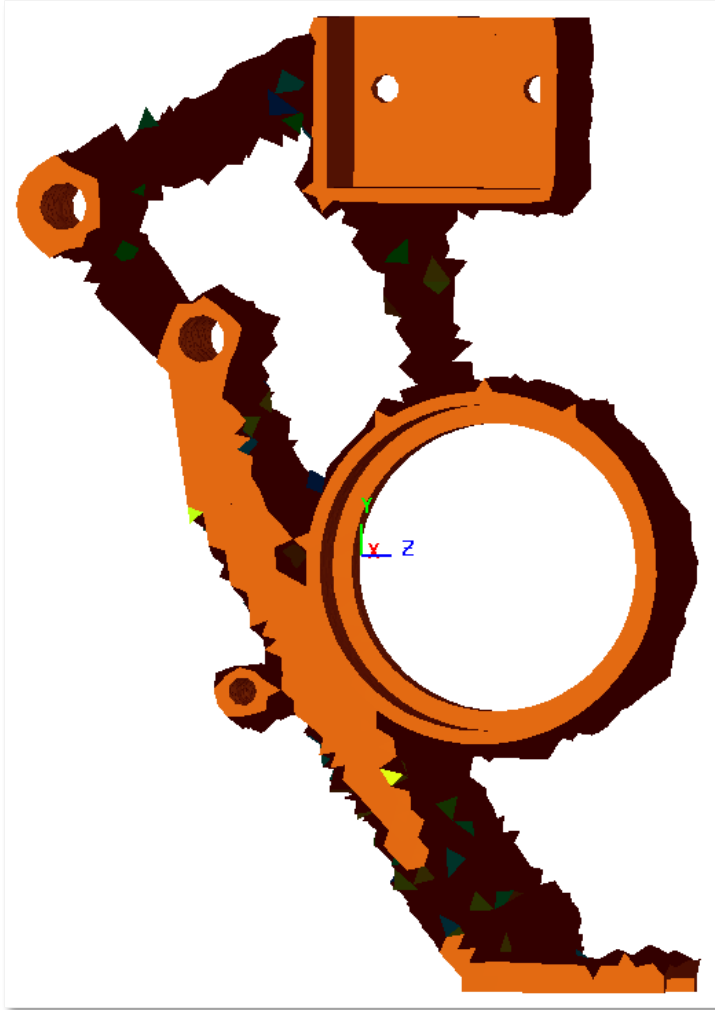
2. Schritt



$$(I - \lambda dt L) X^{n+1} = X^n$$

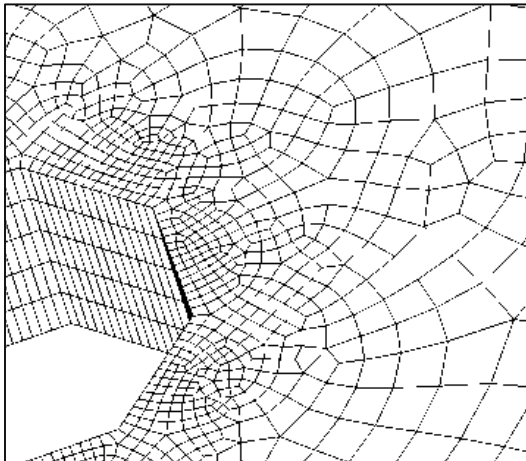
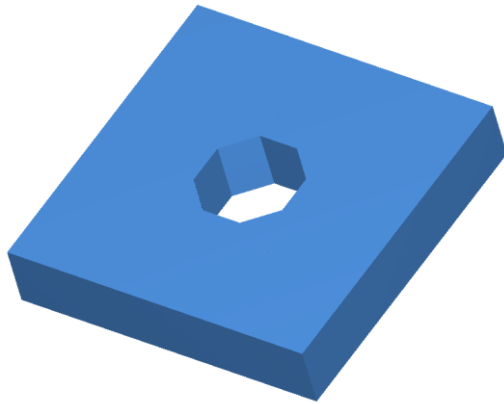
$$L(x_i) = \frac{1}{|N_1(i)|} \sum_{j \in N_1(i)} x_j - x_i$$





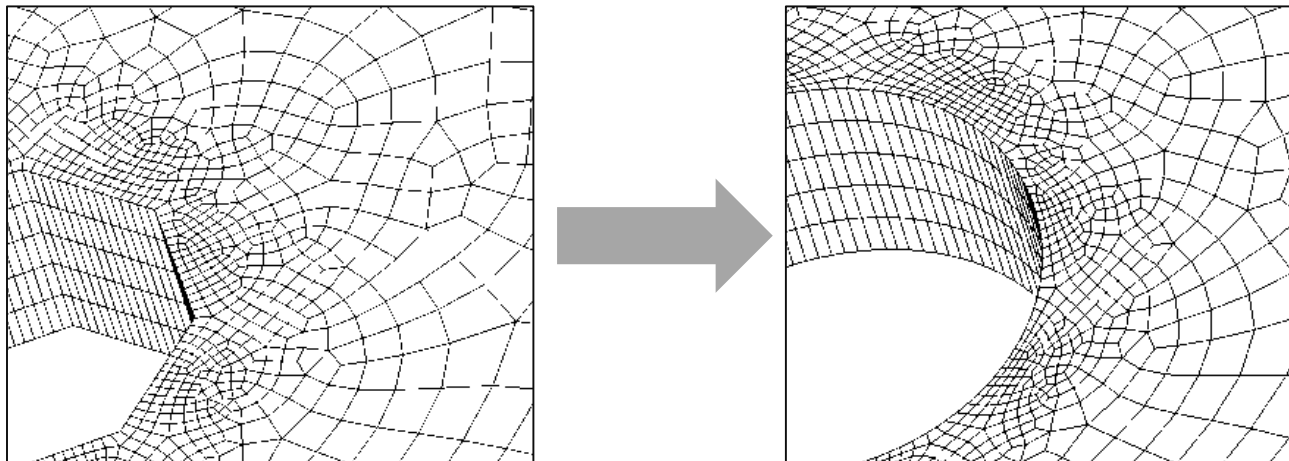
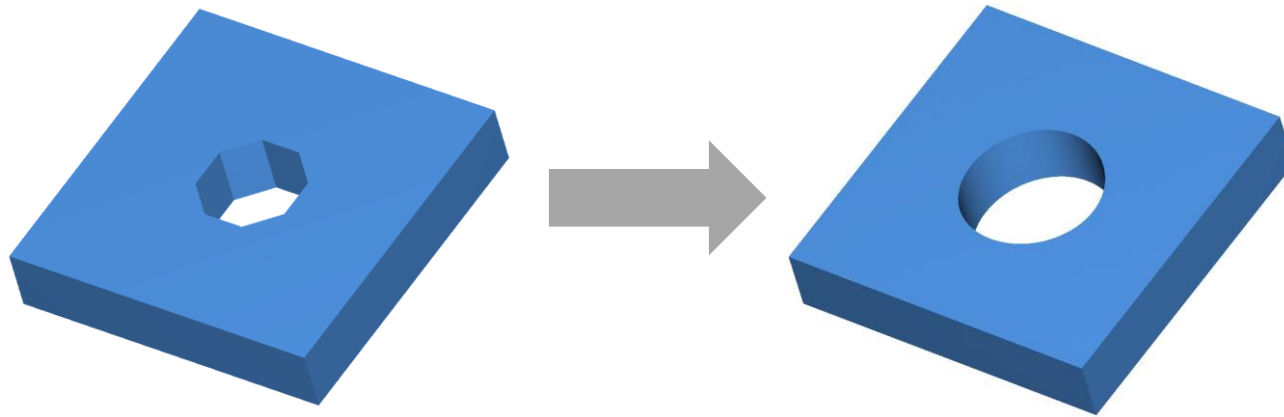


**Methode:** Computer Aided Optimization (CAO)



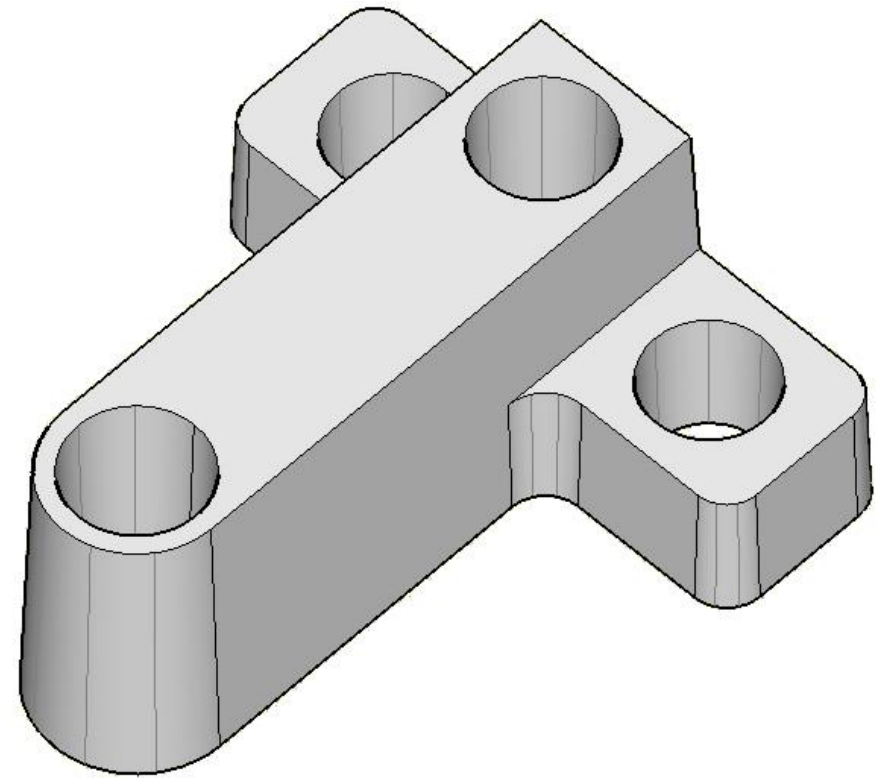
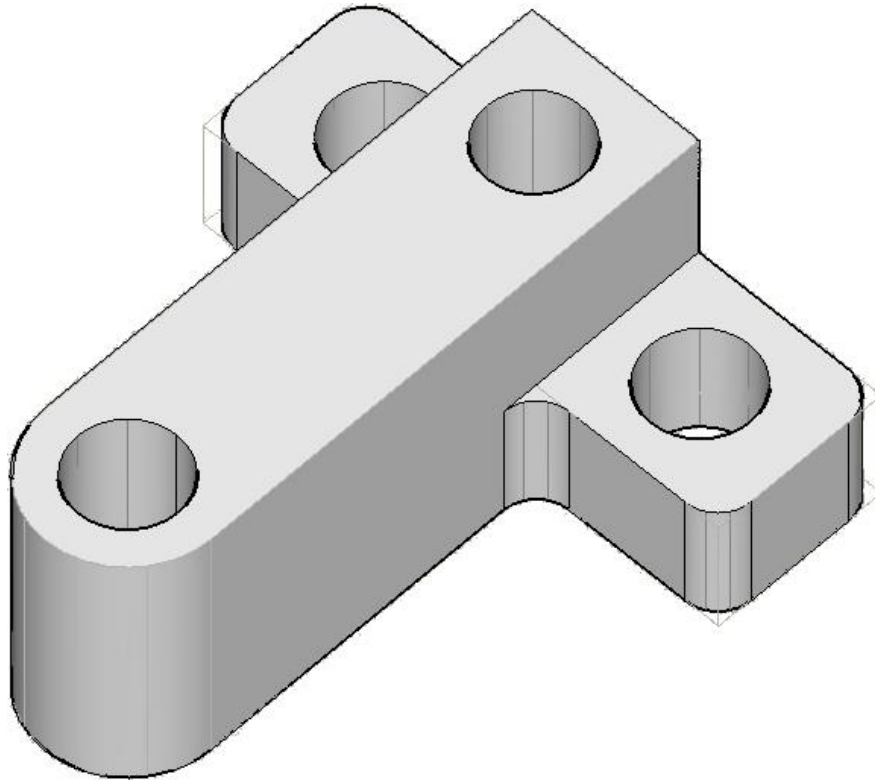


Methode: Computer Aided Optimization (CAO)



# Was kommt in Zukunft

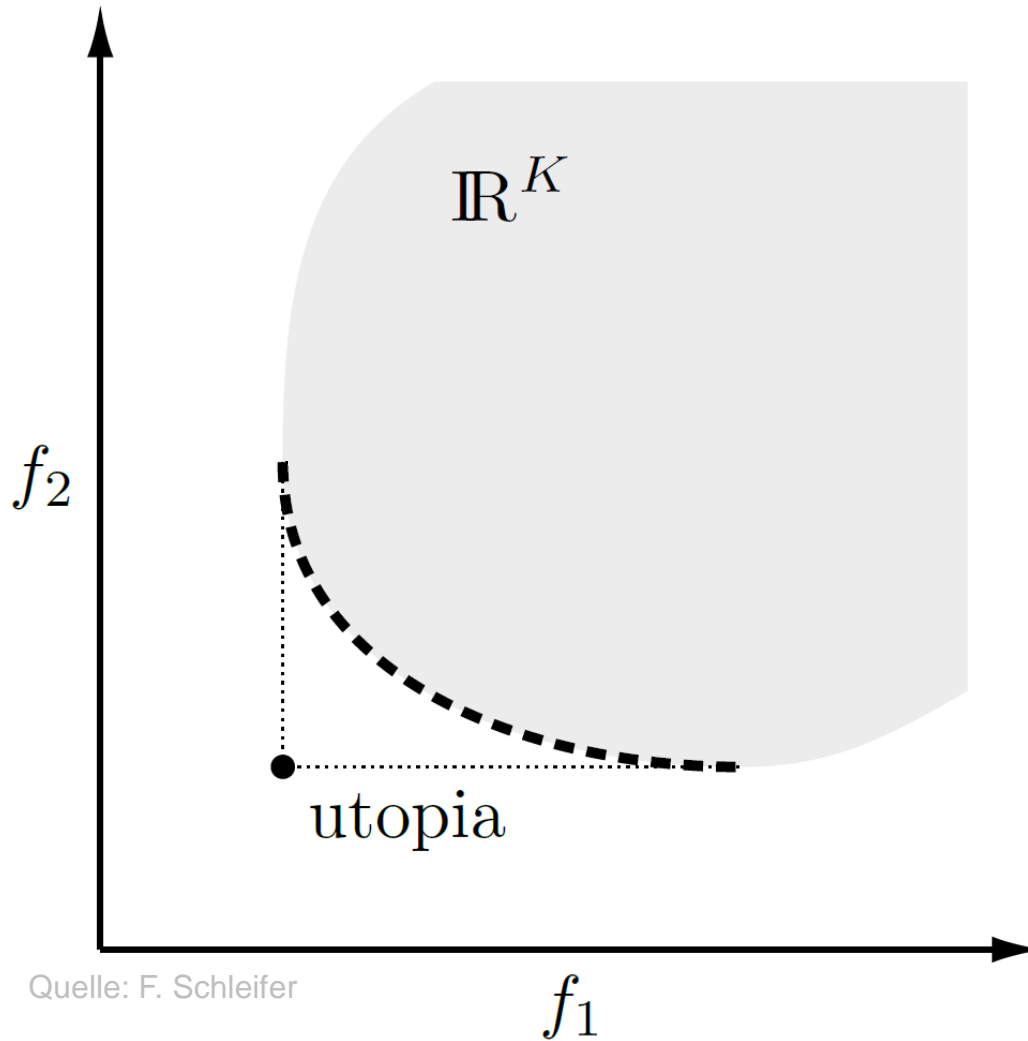
## Fertigungsrandbedingungen



Quelle: [www.formz.com](http://www.formz.com)

# Was kommt in Zukunft

## Mehrzieloptimierung



Quelle: F. Schleifer





Vielen Dank für Ihre Aufmerksamkeit