**Use of a generic and adaptive process chain for multidisciplinary optimization in car body development**

The design of a vehicle is influenced by many requirements from many different engineering disciplines. One way to capture this complexity and interdisciplinary interaction is simulation-based multidisciplinary optimization. It automatically searches for the best possible compromise, but also requires considerable numerical resources to do so.

Therefore, in past research, a novel adaptively controllable MDO process was developed (Büttner et al. 2023). This process not only significantly reduces the numerical resource requirements, but also increases the optimization quality. The complete workflow is controlled by *optiSLang* and from a process point of view, the two following points are particularly noteworthy:
First, the optimization process is completely generic. This means that the complete setup of the process is controlled by an external control file.
Second, the optimization process not only adapts itself through the knowledge gained during the iterations but can also be actively manipulated by the user if needed.
Both points provide a high degree of flexibility, allowing the MDO to be used productively in the sometimes very agile and volatile vehicle development process.

References:
Büttner J, Schumacher A, Bäck T, Schwarz S, Krause P (2023) Making multidisciplinary optimization fit for practical usage in car body development. Structural and Multidisciplinary Optimization. 66. 10.1007/s00158-023-03505-z.

Contact:
Jana.buettner@porsche.de