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Vortragstitel	Low Speed Flow Control - Overview of R&T Activities in LuFo and European Projects
Autoren	H. Bieler
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Abstract	<p>Flow control technology is of immense importance in modern aerodynamics. For example high-lift systems of modern transport aircraft are almost designed to their limits in that they are kept as simple as possible but produce the required lift for take-off and landing. Further optimisation of an already highly optimized low speed configuration is very challenging and the improvement gains via pure shape design might not justify the required effort. One major limiting factor, especially for single-flap systems (slotted or not) is the flow separation that occurs at rather high flap deflection angles.</p> <p>However, active separation control by means of dynamic wall jets has in recent years proven to be a very effective and robust tool to delay separation or to reattach an already separated flow. This will enable the design of more efficient high lift configurations and enhanced efficiency of further low speed relevant components (e.g. control surfaces). In addition, due to the flow control on demand capability, active flow control is a perfect candidate to improve the flow at off design conditions. For instance in case of engine failure at take off an extreme and immediate rudder deflection has to be realized, active flow control ahead of the rudder might improve the rudder efficiency drastically.</p> <p>This paper highlights some recent findings in national and European R&T projects. Examples from ongoing studies illustrate how active flow control can improve the high lift performance. In European projects major design and validation work is ongoing, whereas numerical tools to prepare flow control as a design parameter are in the focus of national projects.</p>