

# Abstract zum Seminarvortrag am 31. Mai 2016

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**Fahrgastkomfort –**

**Unter welchen Umständen fühlen Passagiere sich wohl?**

**Passenger comfort –**

**Which conditions influence the passengers' well-being?**

For the development of new passenger cabins in airplanes or trains, one important design criterion is the thermal comfort that can be provided for the passengers. Nowadays demands are changing, as for example the usage of electronic devices has become very common while traveling. One result of additional electronic equipment in the passenger cabin is the extra amount of heat load that is created. As a consequence, advanced ventilation systems are considered by researchers and aircraft or railway industries. In addition to the improvement of conventional mixing ventilation systems, new ventilation principles like displacement ventilation are developed and investigated. Our current research project (CENT, Comfort and efficiency enhancing technologies) deals with the thermal comfort that is given when using new ventilation systems in an aircraft cabin. We combine subjective data and physical measurements to gain a thorough understanding of the passengers' comfort sensations. Sample results from human subject tests are presented.

Lighting in passenger cabins is the second factor that is considered in our research. Some results are presented that were gained in the project Next Generation Train (NGT) III: Generally, lighting in passenger rail cars is designed according to defined standards to implement a safe and healthy as well as comfortable lighting situation for the passengers. For the NGT, a new luminaire was developed including OLEDs. OLEDs are homogeneous area light sources that produce diffuse light with no glare and excellent color rendering. It is assumed that with OLED lighting, a highly effective lighting solution for the NGT is realized because of its low maintenance and small installation space demands and its low power consumption. Additionally, OLEDs should establish a very comfortable lighting situation for the passengers.