



Silent electric train transportation – present and future technologies

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ABSTRACT

Efficient means of transportation are essential to assure social and economic development of our society. This is true for long distance as well as mass transit in the fast growing cities all over the globe. The future for mobility seems to be electric. On rail or on road. Rail traffic is assumed to grow in the future, as one part of the equation to assure access to mobility. To cope with the enormous demands of high capacity in mass transit, rail bound transports will for a long while be a crucial component. In Europe the population are in general very positive to trains as a mean of transportation but they prefer it to be more quiet. Hence, a lot of efforts have been dedicated towards reducing the noise annoyance from railways in the last decades.

The noise control solutions developed and to be developed can be classified in different ways. In this presentation they will be classified in relation to implementation, since only implemented research results will reduce noise annoyance. Some research results have been available for a long time but are for different reasons not applied. In such a case, what hinders the implementation needs to be understood, rather than to continue research. In other areas a better basic understandings of governing physics and validation of methodologies are needed to assure implementation. Yet, in some areas new technologies are required. Many of the areas important to further develop are included in the lager Shift2Rail EU research project.

Moreover, it is of interest to gain deeper knowledge about the future transportation systems where the border between different modes of transportations may radically change. The difference between electric cars connected as a train and electrical multiple units forming trains are diminishing and hence also the research question will have to evolve for noise control of new electric rolling stock as well as new all electric vehicles.

It is of great importance to establish a common understanding and orientation for future research and this overview and classification aims at giving a basis for such an understanding.

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