

Reliability issues in the microscopic modelling of pedestrian movement

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Microscopic models of pedestrian movement have been developed since 1990 mainly to gain insight into the mechanisms behind known pattern of movement or jamming, and to predict evacuation time and critical areas during evacuation in the planning and authorization process of large buildings and pedestrian facilities. This raises the question of reliability: Is the model capable of calculating the correct movement and to what detail, and are the parameters known well enough that they can be applied in routine practice of civil engineering. It is shown that used properly, the different models all can predict evacuation times fairly accurately and give further useful information; but the proper use requires expertise, and the models generally are not correct down to the degree of detail they provide. Modern overhead video equipment is capable of giving correct trajectories of persons even in high density situations, and so a detailed verification will be possible in the future, hopefully leading to much improved reliability of the models.

The talk reports joint work with Armin Seyfried and Maik Boltes (all Forschungszentrum Jülich GmbH)