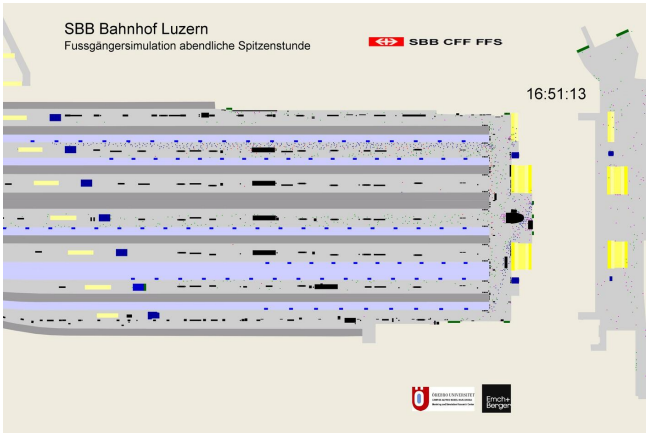
SBB Bahnhof Lucerne Pedestrian Simulation

The amount of travellers using trains is still increasing. Larger train stations become more and more shopping center with railroad access. It is to be expected, that these developments will lead to bottlenecks within the existing infarstructure. To support the planning and decision process concerning the design and realization of measures simulation, especially micro simulations of pedestrians, are appropriate tools to analyse the impacts of planned measures.

To analyse different development scenarios for the SBB main station Lucerne a agent based micro simulation of the entire station was developed based on an existing pedestrian simulation. Using existing data of travellers, new collected data of pedestrian amounts at all entrance and exists of the station and the timetable a complete origin destination matrix was developed. On this basis 16'000 agents were simulated during the time period 4:20pm - 6:40pm.

As results e.g. travel times, densities (LoS) and loads of elements as e.g. stages and escalators were calculated. Bottlenecks were identified as well as obstacles. Recommendations for measures were made and the impacts of these measures analysed.



Place
Lucerne

Client
The Swiss Railway SBB

Period: 2008 - 2009

Delivered services
- survey pedestrian movement
- development origin destination matrix
- behavioural modelling
- pedestrian movement
- developments of measures

Specifications
- multi agenten system
- simulated agents: 16'000
- simulated trains: 49
- simulation period: 16:20-18:40