

CALL FOR PAPERS

The increasing urban population around the world has made the control and management of crowded public facilities a challenge to urban planners and safety authorities. Transportation hubs and large-scale buildings host an increasing number of users and occupants; and mass gatherings are more frequent than ever before. This motivated the development of dedicated models and more accurate knowledge of pedestrian movement to improve safety and comfort in crowded public facilities, prevent overcrowding, and plan for cases of an evacuation.

Within this area of research, a major gap is the fact that empirical research is disproportionately underrepresented compared to the body of theoretical and purely-computational studies. The lack of adequate empirical studies has left many theoretical models of crowd dynamics unverified, with their reliability and prediction outcomes often being subject to skepticism.

This special issue aims at reducing the gap between the theoretical and empirical body of knowledge in the domain of pedestrian dynamics by encouraging data-driven studies. The issue covers studies ranging from normal-condition movements to evacuation scenarios. The main criterion of inclusion is the demonstration of substantial and robust links to empirical data (whether from experimental or field sources). We also strongly encourage studies related to the calibration and validation of pedestrian models. These models can encompass those of pedestrian motions and pedestrian dynamics to behavioral models of wayfinding, decision-making, and beyond. Purely experimental studies that make significant contributions to fundamental understanding of pedestrians' behavior are also welcome.

Although the primary focus of this special issue is on empirical and data-driven studies, theoretical and methodological work that offer significant contributions to the field may also be considered. Also, simulation-based or computational studies that draw informative parallels with the existing empirical data (e.g., comparing simulated versus observational fundamental diagrams) and studies that report on simulation-based behavior modifications (e.g., identifying optimum behavior) may also be considered.

Potential topics include but are not limited to the following:

- ▶ Innovative methods of data collection, measurement, and visualization in pedestrian research and crowd control (including machine- and deep-learning techniques)
- ▶ External validity, generalizability, and replicability of pedestrian experiments
- ▶ Applications of virtual-reality and augmented reality experiments (e.g., in the domain of emergency evacuations)
- ▶ Evacuation drill experiments and studies that make systemic use of field data in actual emergencies like fires, earthquakes, and so on
- ▶ Pedestrian safety in crowded walkways and intersections
- ▶ New methodologies for simulation-based replication of well-known crowd phenomena or simulation-based reexamination of controversial crowd phenomena
- ▶ Innovative collection and analyses of field pedestrian data in transportation hubs
- ▶ Calibration and validation of modeling approaches for simulating complex transportation nodes

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jat/eddr/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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