1145-35-345   **Marie-Therese Wolfram*** (`m.wolfram@warwick.ac.uk`), Mathematics Institute, University of Warwick, Gibbet Hill Road, Coventry, CV47AL, United Kingdom, and **Adriano Festa** and **Andrea Tosin**. *A kinetic model for pedestrian dynamics.*

In this talk we propose and study a kinetic model for pedestrian dynamics. In this model individuals move in a desired direction, while avoiding collisions with others by stepping aside. These minimal microscopic interaction rules lead to complex emergent macroscopic phenomena, such as velocity alignment in unidirectional flows and lane or stripe formation in bidirectional flows. We start by discussing collision avoidance mechanisms at the microscopic scale, then we study the corresponding Boltzmann-type kinetic description and its hydrodynamic mean-field approximation in the grazing collision limit. In the spatially homogeneous case we prove directional alignment under specific conditions on the sidestepping rules for both the kinetic and the mean-field model. In the spatially inhomogeneous case we illustrate, by means of various numerical experiments, the rich dynamics that the proposed model is able to reproduce. (Received September 03, 2018)