

*Abstract:* The work treats a macroscopic pedestrian flow model. It shows the link of two possible definitions of the pedestrians' preferred direction of movement, one based on minimization of a functional, the other using the eikonal equation. The eikonal equation is derived in two dimensions, taking into account that the distant endpoint of the fastest path to the exit depends on the location of the pedestrian under consideration. Also, necessary conditions for a piecewise regular curve to be the minimizer of a certain functional in a related two-dimensional variational problem with non-standard Dirichlet boundary condition are formulated.