

Analysis of critical levels of physical effects on localized masses of people (crowd)

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Critical levels of non-lethal effects on localized masses of people (crowds) have been defined to increase effectiveness of operational and tactical activity of law-reinforcement organs on the base of mathematical simulation.

The dynamic model for crowd behavior in conditions, close to critical for psycho-emotions, with the help of correlation kinetic formulas of “auto-catalytic” propagation of panic in combination with neural network has been discussed.

The developed model helps to find main features of crowd behavior depending on space-time conditions of physical non-lethal effects, as well as their intensity.

The obtained results are considered, which helped to develop a basis and main criteria to select “optimal” solutions of typical problems of law-reinforcement organs when suppressing mass disorders. Analysis of the selected methods and tactical patterns in comparison with the analytical results is presented and differences are discussed.

Keywords: crowd, mathematical simulation, non-lethal effect levels, comparative analysis