

# **SOME ASPECTS OF APPLICATION OF THE AEROSOL "NON-LETHAL" WEAPON**

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## **Introduction**

Methodology and software for estimation of ecological aspects of application of the aerosol "non-lethal" weapon and influence of aerosol screens on work of television, infra-red systems of supervision and laser systems are very interesting.

The actuality of this work is determined by the modern development of information and computer technologies allowing for creating the imitation mathematical models of efficiency of aerosols non – lethal weapons influence on detecting devices and estimating the ranges of their applicability. Finally the mathematical modeling gives the base for formulating the requirements to new detecting tools.

The program code carries out calculations of an aerosol impurity transfer in atmosphere and simulates processes of influence of aerosol screens. The chosen typical situations allow to define decrease of parameters of overall performance of systems for observation along horizontal lines, to choose a type of a source of aerosol screens - both artificial and natural.

In general case the software contains:

- Block for modeling transfer of an aerosol impurity;
- Analysis of systems of reconnaissance and observation
- Choice criteria of estimation,
- Methodical study of rating of an overall performance in conditions of influence of aerosol screens,
- Working programs providing calculation of an overall performance of systems for observation in conditions of influence of aerosol screens.

This report considers the Block 1 only: a volume of liquid toxicant either explodes or pours out in the upper layer of the atmosphere. This giant drop moves in the atmosphere fragmenting because of the hydrodynamic instabilities caused by the interaction with head air flow and then the daughter droplets fall down evaporating partly the material during their way from the sky to the earth. The model allows to estimate the surface distribution of the fallout. General formula for modeling was derived by author and Prof. A.Lushnikov.

