Monitoring & Forecasting of Natural & Man-caused Emergencies

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Collaboration Between Disaster Managers & Scientists in Emergencies, Italy/Ispra, 2017
Modern civilization: tendency to increase natural & technogenic, biological & social risks.

Result: complication of forecasting and warning.

Solution: Emergency Situation Monitoring & Forecasting System

part of: Unified State System for Prevention & Elimination of Emergency Situations

coordinated with: National Center of Crisis Situations.
Short-term forecasting

- **Solution**: Automated systems for short-term forecast of natural and technogenic emergencies

- **Methodological basis**: Formalized calculation of the probability spectrum of different levels of natural and technogenic emergencies

- **System output**: range of probabilities for different types of emergencies

- **With details**: on hierarchy levels of territories & objects of federal significance
Center «Antistikhiya»

Monitoring: environment, sources
Forecasting: occurrence, development, consequences
Development: information, databases, software
Identification & analysis: phenomena, conditions, scenarios
Guidance: for monitoring, laboratory control & forecasting
Support for NCMC: forecasts (urgent, mid-term, long-term), informational, expert, analytical
Boosting of efficiency: approaches, technologies, introduction of scientific achievements
Possible cooperation areas

1. Predictive monitoring
2. Analysis of vulnerabilities of territories & objects
3. Identification, analysis & development of ES
4. Forecasting and modeling of development of ES
5. Identifying likely forms of damage
6. Training of specialists
7. Recommendations for improving regulatory frameworks
Software based on formalization

- Emergencies caused by floods
- Calculating the time for fire to reach settlements
- Parameters of chemically dangerous substances
- Parameters of biological & social sources
- Seismic activity of the earth’s crust
- Emergency threats in railway transport
- Analysis of meteorological information
- Forest & technogenic fires
Catastrophic flood – Lensk, 2001

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Dangerous natural phenomena & ES

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Thank You!