

## Processing of Pressure Pulsations and Wind Velocity Data at Infrasound Stations

Results have been obtained that make it possible to detect infrasound signals based on minimization of false alarm probability using data from pressure and wind velocity measurement channels. An algorithm for creating a multichannel selector performance characteristic has been developed using likelihood ratio as per results of background measurements at the pressure and wind velocity channels as well as modeling acoustic signals in infrasound frequency range. Joint processing is based on methods presented at the SnT2015 in Vienna. It uses the principle of maximization of likelihood ratio  $\Lambda$  with joint recording of pressure pulsations and wind velocity. This method uses the product of conditional probabilities for independent functionals  $\Phi_1, \Phi_2$  of joint recording of functional  $\Phi_{\text{дет}}$  calculated on the basis of data from pressure pulsations measurement channel as an assessment criterion  $\Lambda$ . The  $\Lambda$  numerator consists of the product of probabilities  $\prod P(\Phi_i)$  calculated subject to signal  $S_k$  availability. The  $\Lambda$  denominator consists of the product of probabilities  $\prod P(\Phi_i)$  calculated subject to signal  $S_k$  absence.

**Primary author:** RYBIN, Igor (Ministry of Defence)

**Presenter:** RYBIN, Igor (Ministry of Defence)

**Track Classification:** 1. The Earth as a complex system