ID: Type: **Poster**

T1.1-P19. Technique of joint processing of pressure pulsations and wind speed information at IMS infrasound stations

This technique enables to obtain more credible detection results as it minimizes probability of false alarm with designated detection probability. The technique is based on the principle of Λ likelihood ratio maximization with joint recording of pressure pulsations and wind speed. As Λ assessment criterion the technique uses the product of conditional probability ratios for independent functionals: F1, F2 of joint recording of functional Fdet calculated on the basis of data from pressure pulsation measurement channel. Λ numerator is composed of probabilities product P(Fi) that is calculated subject to signal S_k availability. Λ denominator is composed of probabilities product P(Fi) that is calculated subject to the absence of signal. A decision on signal detection is made when Λ exceeds the threshold level corresponding to detection probability. Signal parameters S are determined as Λ(S)reach maximum value. It is proposed to use dependence of pressure root-mean-square error on mean wind speed as functional F1 and correlation factor r of time derivatives of pressure and wind speed as functional F2 (acquisition data are passed preliminarily through a low-pass filter). STA/LTA and PMCC (multichannel multiple cross-correlation) methods can be used in determining Fdet.

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Track Classification: 1. The Earth as a complex system