

The invention relates to methods for radar metrology for measurement of parameters of atmosphere. Method for determination of type of temperature stratification of atmosphere includes measurement of coefficient of anisotropy ( $K_a$ ) of temperature heterogeneities of atmosphere, determination of type of temperature stratification of atmosphere on basis of measured coefficient of anisotropy and obtained before dependence of coefficient of anisotropy ( $K_a$ ) on type of temperature stratification of atmosphere. Coefficient of anisotropy is measured for chaotic rate of molecules ( $v$ ) through measuring anisotropic phase of acoustic echo-signal ( $\varphi$ ) in vertical plane that is relates to chaotic velocity of molecules by reverse dependence, at pulse mono-static acoustic probing atmosphere in vertical plane, simultaneously in two or more different at angle of elevation ( $\beta$ ) directions, at that to increase range of measured temperature stratification of atmosphere one performs multiplication of frequency of echo-signal detected by value  $n$ , with dividing frequency of echo-signal detected by value  $n$ , at that selection of value  $n$  is determined under condition for which one determines temperature stratification and coefficient of anisotropy of phase of acoustic echo-signal ( $K_\varphi$ ) one determines on basis dependence of phase of acoustic echo-signal ( $\varphi$ ) on angle of elevation ( $\beta$ ), obtained, as difference of values  $\varphi_B$  and  $\varphi_g$ , at that  $\varphi_g$  – value of phase for horizontal direction determined at extrapolation of dependence  $\varphi = f(\beta)$  for angles  $\beta = 0^\circ$ , and  $\varphi_B$  – value of phase for vertical direction obtained for angles  $\beta = 90^\circ$ , after that for coefficient of anisotropy of phase of acoustic echo-signal obtained in such way,  $K_\varphi = \varphi_B - \varphi_g$  on basis of obtained before experimentally dependence of coefficient of anisotropy of phase of acoustic echo-signal  $K_\varphi$  on type of temperature stratification of atmosphere one determines type of temperature stratification of atmosphere. The invention provides increase of accuracy of remote measurement of type of temperature stratification of atmosphere.