

The invention relates to means of radiolocation meteorology. Method for measurement of anisotropy of index of refraction of atmosphere of Earth is in measurement of atmospheric pressure (P), temperature of atmosphere (T) and pressure of water vapor in air (e) with calculation of basis of measured values (P), (T) and (e) of index of refraction of atmosphere (N) by given formula. To calculate index of refraction (N) one measures anisotropy of air temperature (T) in vertical plane through measurement of anisotropy of coefficient of ambipolar diffusion (D_{α}), after that by means of represented by graph mathematical dependence of coefficient of anisotropy of value (D_{α}) on coefficient of anisotropy of temperature one determines anisotropy of temperature for measured values of anisotropy of values D_{α} , at that anisotropy of value D_{α} one determines on basis of obtained at radio-location observations of ionized meteor traces of dependences $D_{\alpha} = f(\alpha)$ and $D_{\alpha} = f(\beta)$, where α - angle between vertical direction and direction of radio beam, and β - angle of elevation of radio beam, through determination of value D_{α} for horizontal direction ($D_{\alpha r}$) as result of extrapolation of dependence $\lg D_{\alpha} = f(\lg \alpha)$ to values $\alpha = 90^{\circ}$ and value D_{α} for vertical directions as result of extrapolation of dependence $\lg D_{\alpha} = f(\lg \beta)$ to values $\beta = 0^{\circ}$, and then for values obtained $D_{\alpha r}$, and $D_{\alpha B}$ one determines coefficient of anisotropy of value D_{α} as $K_D = \frac{D_{\alpha r}}{D_{\alpha B}}$, after that for value K_D found, by mathematical dependence of anisotropy of coefficient of ambipolar diffusion on coefficient of anisotropy of air one determines coefficient of anisotropy of air K_T , and then for value of coefficient of anisotropy of temperature (K_T) found one calculates value of temperature for horizontal direction (T_r) and vertical direction (T_B) for given system of equations for two unknowns (T_r) and (T_B), after that for values T_r and T_B found, and measured in period of measurement values of total pressure of atmosphere (P) and water vapor pressure (e) one calculates value of index of refraction for horizontal (N_r) and vertical (N_B) directions. The invention provides increase of accuracy of measurement of index of refraction of atmosphere.