

The invention relates to radar metrology, in particular to acoustic methods for measurement of parameters of atmosphere, and can be used at compilation of radio-climatic maps and in works for prediction of communication, navigation and radio-location. Method for measurement of anisotropy of coefficient of refraction of atmosphere of Earth is in measurement of anisotropy of air temperature in vertical plane through measurement of anisotropy of phase of acoustic echo-signal at simultaneous pulse acoustic atmospheric sounding in two and more different by angle of elevation directions, determination of difference of temperatures of atmosphere for horizontal and vertical directions, one measures value of average temperature of atmosphere by means of which one finds values of temperature of atmosphere for horizontal and vertical directions with calculation of value of index of refraction of atmosphere for horizontal and vertical directions. Technical result of the invention is in increase of accuracy of measurement of anisotropy of coefficient of refraction of atmosphere.