

**Influence of the stratification on the distribution of electro-magnetic waves
(On the example of south Caucasus region)**

Lamzira Laghidze, Nino Paichadze, Maia Vakhtangishvili

E-mail: lamzira.laghidze@tsu.ge

Department of Geography, Iv.Javakhishvili Tbilisi State University, 0179, Tbilisi, I.Chavchavadze #3

There is a lot of meteorological processes in the troposphere that are caused by orographic, climatic and micro-climatic characteristics and transformation of air masses in South Caucasus region. These occurrences are irregular and cause random fluctuations of electro-magnetic fields and therefore changes in refraction index (N) that as a result creates different conditions of the refraction.

Calculations have shown that in South Caucasus region, refraction index (N) changes in wide range 210÷335 unit. And refraction index gradients - 11.8÷-16.0 unit/100m. range (positive, negative and over refraction).

It is concluded that refraction gradient and therefore refraction in summer period depends on the temperature and absolute humid conditions and time and space distribution in the troposphere and in the winter period is mainly dependent on variations of pressure. Inversion and isothermia of the temperature cause rise in humidity and reducing of the turbulence. These processes are non-periodical and cause the fluctuation processes and unforeseen changes in radio wave distribution.