

In this work I present a study dedicated to the penetration of whistler-mode waves to the ionosphere. An algorithm of automatic detection of whistlers in spectrograms computed from the data measured on the DEMETER satellite is described. A method of causative lightning detected by the EUCLID lightning detection network assignment to a detected whistlers is described. Results of statistical study dedicated to relationship between the detected whistlers and assigned causative lightning. Based on the processing of data from 364 passes of the DEMETER satellite over monitored area is shown, that mean whistler amplitude decreases with distance between the causative lightning, increases with causative lightning current and in the evening is approximately three times higher than in the morning. A study dedicated to subprotonospheric whistlers is presented. We found, that subprotonospheric whistler causative lightnings currents are very high compared to that of usual  $O^+$  whistlers.