



When do lightning strokes become whistlers detectable on the ground?

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AWDANet is a ground-based network for automatic whistler detection and analysis. It detects and analyses whistler waves that penetrate the ionosphere, undergo ducted propagation in the plasmasphere, and return to the ground in the opposite hemisphere. In this study, we analyse recordings of several years from a number of AWDANet stations around the globe. Based on a large number of whistlers detected in these data, we compare the annual, monthly, daily and hourly whistler counts to lightning stroke counts from the source region corresponding to each receiver station (these regions having been determined in our previous studies). For lightning data we use lightning stroke databases such as the WWLLN. We identify periods of correlation between lightning activity and whistler activity, and periods of no correlation, i.e. a lack of whistler detections during lightning activity. We investigate possible effects that contribute to the existence or absence of detectable whistlers, such as geomagnetic activity.