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Influence of geomagnetic storms on railway telemetry

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The end result of a long chain of space weather events beginning at the Sun is the induction of currents in ground-based long conductors as power lines, pipelines and railway systems. In this paper, we analyzed failures of telemetry (automatic control systems, signaling and switching devices) registered in 2005 on the East Siberian Railway in connection with geomagnetic storms. It was found an increase by ~ 3 times in the total duration of failures observed daily in various railway divisions during severe geomagnetic storms. It was found a significant correlation between the daily sum of durations of failures with local A- index of geomagnetic activity.