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Free-Space-Optical communication as back up in case of non functioning of the GCI-III.

For a modulated beam of visible, the Free-Space-Optical communication is a method for a range of application. For this paper we will focus the Free-Space-Optical communication as back up in case of non functioning of the GCI-III. Taking into account the effects of extreme weather conditions on ten years 2003 to 2012 we have determined the performance of FSO system. The determination of the power received for a range of distance from 1 to 15km deepened the analysis and the discussion of the effects of weather conditions. The rain attenuation distribution was calculated taking into account geometric losses and indicating the availability of the system. In that paper we establish percentages of availability, the power margins and optimal link ranges of some FSO systems, for weather conditions in Dakar. We have made a FORTRAN program for this work. We used Mgraph software on LINUX to draw the graphs outlines. The results were performed by a lognormal distribution with good precision of the tests of correlations. The availability of optical link for weather conditions are established with high precision. We have highlight the advantage of free-Space-Optical communication as a back-up in the case of non-functioning GCI-III in the region of Dakar.

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