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GROUND-TO-X POLARIMETRIC RADIO CHANNEL CHARACTERIZATION IN FOREST SCENARIOS

Abstract - This paper describes undergoing work to characterize the propagation in forest, in terms of polarization of waves, delay and angle of arrival dispersion of the rays for a transmitting frequency around 1.35 GHz. Since the main application of this work is the localization of injured or lost people in forest . Measurements have been carried out with a real time MIMO channel sounder with 8-element transmitting/receiving arrays, its frequency band being 80 MHz. Each array element is a dual-polarized patch antenna allowing a multidimensional polarimetric estimation of the channel. The statistical multidimensional channel characteristics have been computed when the mobile transmitter (Tx) is on the ground surface. Rx can be either near the ground surface or on-board a lightweight airplane flying over the zone of interest. Indeed, propagation phenomena, as diffraction and diffusion, would lead to a number of propagation paths which may have a strong impact on the localization accuracy.

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