عنوان مقاله:

Physical layer simulator of the deep space to ground high photon efficiency optical wireless communications link

محل انتشار:

اولین کنفرانس منطقه ای مخابرات نوری بیسیم غرب آسیا (سال: 1397)

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خلاصه مقاله:

This paper focuses on the implementation of the physical layer simulator for the deep space to ground high photon efficiency optical wireless communications link designed by NASA. The link employs the serially concatenated pulse position modulation (SCPPM) transmitted over a cloud free atmospheric and turbulent atmospheric link. The decoder is an iterative process based on the BCJR algorithm to achieve the optimum bit error rate (BER) performance. The results show that for the higher orders of SCPPM a lower signal to noise ratio is required to achieve the same BER as the lower orders. The effects of atmospheric turbulence on the link performance is also demonstrated as well as the combative technique of channel interleaving of the data

کلمات کلیدی:

Free-space optics, coding, PPM, space to ground satellite communications