

## عنوان مقاله:

Beam Switching based Millimeter Waves for Multi Gigabits Services in High-Speed Trains

## محل انتشار:

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## خلاصه مقاله:

The present paper investigates the use of millimeter wave (mm wave) in high speed train (HST) communications using beam switching method. Considering the request for multi Gbps wireless service at high speed trains, an important technique to achieve such high data rate is to employ mm wave communications. Although mm waves provide wider bandwidths and higher data rates up to several Gbps, to compensate their high path loss, it is required to use transmit-receive beam alignment techniques. Beam switching architectures can reduce the amount of beamforming overhead, by having an initial train position estimate. The train position is given by the train control system (TCS) and therefore the use of beam switching method is considered to be logical and practical. The primary goal is to find the optimum number of beams that will maximize the average data rate. Numerical results show that a communication system with a large number of beams in the rail coverage is very sensitive to velocity estimation error. However, the use of small number of beams also results in a decrease in the received average data rate.

## کلمات کلیدی:

Beam alignment, Beam switching, Mm wave communication, High speed train

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/698414>

