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Comparison of the modelled maximum wireless link distance for TVWS and Wi Fi within South African regulatory constraints: Which technology wins and in which scenarios?

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ABSTRACT:

The work compares Wi-Fi and television white space (TVWS) technologies for practical broadband communication links, specifically in rural areas. The paper starts with an overview of advantages and limitations of Wi-Fi and TVWS in terms of practically important parameters including propagation attenuation. The maximum range with the maximum transmit power limits permitted by South African regulations are calculated. 5.8 GHz Wi-Fi has more lenient restrictions on the EIRP and is found to offer longer range, whilst TVWS better handles vegetation.