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## Rain fade mitigation on earth-to-satellite microwave links using site diversity (Conference Paper)

Rafiqul, I.M.<sup>a</sup> , Habaebi, M.H.<sup>a</sup>, Haidar, I.M.<sup>a</sup>, Lwas, A.K.<sup>a</sup>, Zyoud, A.<sup>a</sup>, Singh, M.<sup>b</sup>

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### Abstract

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Rain is the major challenge to design reliable earth to satellite microwave link at higher frequencies in tropical regions. Site diversity is one of the techniques used to mitigate this problem. Hodge and ITU-R Site Diversity Gain Models and ITU-R Diversity Improvement Factor Model are analyzed based on measurements at two locations in Malaysia. The measured rain intensity at IIUM and UKM campus for six months period with 1 minute integration time was used to predict attenuation with MEASAT3A as reference satellite. Two locations are separated by 37.36 Km distance. The measured site diversity gain and improvement factor are compared with predicted values. It is found that highly available satellite links can be achieved through site diversity. © 2015 IEEE.

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