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| Title | Data Rate Limit in Low and High SNR Regime for Nakagami-q Fading Wireless Channel | | |
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| Published Journal Name | International Journal of Advanced Computer Science and Applications | | |
| Type of Publication | Journal | | |
| Volume | 11 | Issue | 7 |
| Publisher | The Science and Information Organization | | |
| Publication Date | July 31, 2020 | | |
| ISSN | 2156-5570 | | |
| DOI | 10.14569/IJACSA.2020.0110776 | | |
| URL | https://thesai.org/Publications/ViewPaper?Volume=11&Issue=7&Code=IJACSA&SerialNo=76 | | |
| Other Related Info. | Page 636 - 641 | | |
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| Abstract |  |
| Adequate data rate is always desired in wireless communication channels. Previously, few fading models were used to model wireless communication channels and to perform analysis on them. In this paper, analyses of data rate limit of single-input single-output (SISO) wireless communication system over Nakagami-q fading channels are presented. The calculation of capacity has been carried out using small and large limit argument approximations. The analytical solution for channel capacity is presented using small and large limit argument approximations. Where small and large limit argument approximations correspond low and high signal-to-noise ratio (SNR) regime. Behavior of channel capacity with respect to SNR and fading parameter respectively has been investigated deeply. The comparison of the channel capacity behavior for both low SNR and high SNR regime and have also been done and analyzed. It has found that the channel capacity increased with increasing SNR in low SNR regime. The channel capacity also behave in the same manner in high SNR regime as well. | |