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Investigating the Impact of Distance on the Reception in Molecular Communication

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Abstract

The development of nano-communication networks has greatly benefited from advances in nanotechnology, enabling complex tasks to be performed. These networks utilize molecular communication to enable communication be- tween transmitting and receiving nanomachines and have many medical applications, including targeted drug delivery. Nano-communication network approach minimizes the risk of adverse effects on healthy areas of the body by delivering drugs directly to the affected area. The accuracy and timeliness of drug delivery depend significantly on the distance between the transmitting and receiving nanomachines. This study explores the impact of varying this distance on the reception of molecular communication, including the maximum reception and the timing of peak reception. The results indicate that as the separation between the sender and receiver increases, the number of molecules received decreases while the latency increases.

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