

protect against effective jamming attacks. To analysis such a attacks can seriously disrupt to MIMO-OFDM communications through controlling the jamming signal vectors in the antenna-spatial domain and proposed defence mechanisms based on interference carrier cancellation and transmit pre-coding techniques to maintain OFDM communications under strong jamming.

References

- [1] A. Wood and J. Stankovic, "Denial of service in sensor networks," *Computer*, vol. 35, no. 10, pp. 54–62, 2002.
- [2] W. Xu, W. Trappe, Y. Zhang, and T. Wood, "The feasibility of launching and detecting jamming attacks in wireless networks," in *Proceedings of the 6th ACM International Symposium on Mobile Ad Hoc Networking and Computing*, ser. MobiHoc '05, 2005, pp. 46–57.
- [3] K. Pelechrinis, M. Iliofotou, and S. Krishnamurthy, "Denial of service attacks in wireless networks: The case of jammers," *Communications Surveys Tutorials, IEEE*, vol. 13, no. 2, pp. 245–257, 2011.
- [4] M. Wilhelm, I. Martinovic, J. B. Schmitt, and V. Lenders, "Reactive jamming in wireless networks - how realistic is the threat?" in *Proc. Of WiSec*, June 2011.
- [5] A. Cassola, W. Robertson, E. Kirda, and G. Noubir, "A practical, targeted, and stealthy attack against wpa enterprise authentication," in *Proceedings of the 20th Annual Network and Distributed System Security Symposium (NDSS '13)*, February 2013.
- [6] M. Han, T. Yu, J. Kim, K. Kwak, S. Lee, S. Han, and D. Hong, "OFDM channel estimation with jammed pilot detector under narrowband jamming," *IEEE Transactions on Vehicular Technology*, vol. 57, no. 3, pp. 1934–1939, 2008.
- [7] Z. Liu, H. Liu, W. Xu, Y. Chen, "Wireless jamming localization by exploiting nodes' hearing ranges", DCOSS 2010.
- [8] H. Kaplan, M. Katz, G. Morgenstern and M. Sharir, "Optimal cover of points by disks in a simple polygon", European Symposium on Algorithms 2010.
- [9] P. Tague, S. Nabar, J. A. Ritcey, and R. Poovendran, "Jamming-aware traffic allocation for multiple-path routing using portfolio selection " *IEEE/ACM Transactions on Networking*, 2010.
- [10] I. Shin, Y. Shen, Y. Xuan, M. T. Thai, and T. Znati, "Reactive jamming attacks in multi-radio wireless sensor networks: an efficient mitigating measure by identifying trigger nodes." *FOWANC, in conjunction with MobiHoc*, 2009.