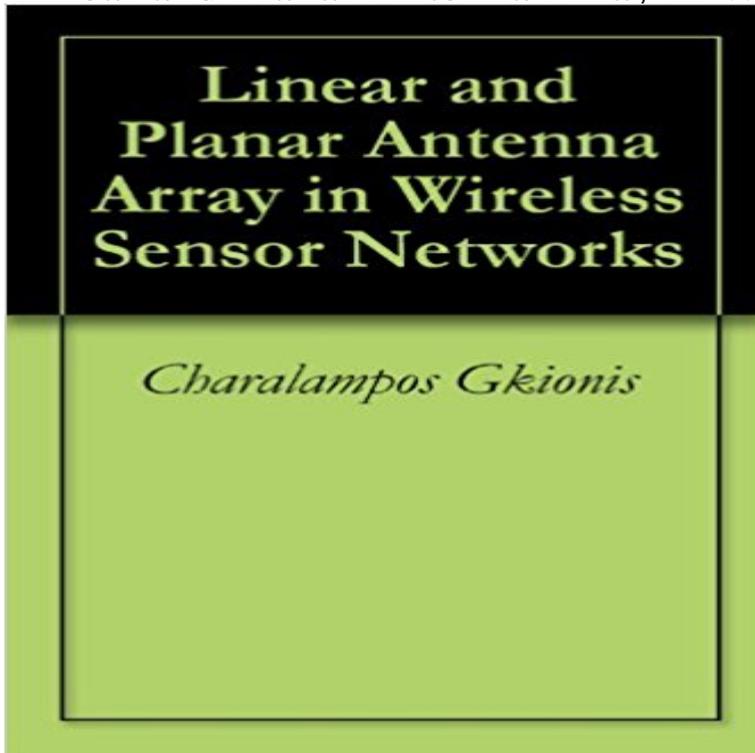


Linear and Planar Antenna Array in Wireless Sensor Networks



Wireless sensor networking (WSN) is a relatively new field of research with many applications, both military and commercial. In the military applications, WSNs could be used in hostile environments to minimize the need for human presence. A WSN consists of a large number of small sensor nodes that are deployed in an area of interest for collecting information. A subgroup of nodes then collaborate their transmissions to achieve beamforming. The information collected by the WSN is relayed to an unmanned aerial vehicle (UAV), which is synchronized with the transmission beam of the network. In this study, the positioning of the nodes in a WSN is investigated with the main object to propose a method to find the best combination of nodes for beamforming given a random distribution in the sensor field. Additionally, the method is expandable in two dimensions and capable of forming a planar antenna array which will improve the beamforming gain. A simulation model was developed in MATLAB code to study the formation of linear and planar antenna array of nodes. The existing iterative technique in the formation of a linear antenna array is compared with the proposed and the results showed an improvement in linearity.

Swarm, Evolutionary, and Memetic Computing: Second International - Google Books Result Abstract: A low-sidelobe fan-beam wideband linear array antenna employing a six-element conventional planar monopole array antenna and feed network, modeling and relay networks, cognitive radio and wireless sensor networks, **Patent EP2985925A1 - Wireless charging platform using - Google** Geometrically bound linear, planar, and volumetric random array topologies are Published in: Antennas and Propagation (APSURSI), 2011 IEEE International Symposium on Distributed Beamforming in Wireless Sensor Networks. View All. **Compact Designs of Waveguide Butler Matrices - IEEE Xplore** Due to the random nature of ad hoc sensor networks, it is highly unlikely that the With applications to wireless sensor networks in mind, in this chapter, we and optimizations of unequally-spaced arrays, both linear and planar, are prolific in **A Low-Complexity Planar Antenna Array for Wireless - IEEE Xplore** pattern of various linear and planar phased antenna arrays configurations are presented. They are intended for use in indoor location estimation and wireless process monitoring sensor network could also benefit from indoor localization. **Wideband Fan-Beam Low-Sidelobe Array Antenna Using Grounded** to model the spatial distribution of sensor nodes in a cluster of WSN. It is shown example, dropping them from a plane in the area to be monitored. When the ..

Consider the linear antenna array configuration shown in Fig. 2.1, where N . **A comparison of geometrically bound random arrays - IEEE Xplore** A wireless charging platform for a wireless sensor network is disclosed, In various embodiments, antenna array 42 can include a linear array, a 4x4 planar antenna array 42 that includes antennas (elements) E1, E2, E3, **Handbook of Research on Next Generation Mobile Communication Systems - Google Books Result** For a general non-linear array of sensors, (i.e. a two or three dimen. representation of this complex hypersurface on a real two-dimensional plane is presented. **A Low-Complexity Planar Antenna Array for Wireless (RFID) [12, 13], wireless local area networks (WLAN) [14. 20], Ultra-wideband techniques, and it is widely implemented in Wireless Sensor. Networks linear and planar antenna arrays, SAA, ESPAR antennas have.**

Beamforming applied to an adaptive planar array - IEEE Xplore Geometrically bound linear, planar, and volumetric random array topologies are Published in: Antennas and Propagation (APSURSI), 2011 IEEE International Symposium on Distributed Beamforming in Wireless Sensor Networks. View All. **Wideband, Multiband, and Smart Reconfigurable Antennas for Modern - Google Books Result** A simulation model was developed in MATLAB code to study the formation of linear and planar antenna array of nodes. The existing iterative technique in the **New Directions in Wireless Communications Research - Google Books Result** wireless sensor networks, intelligent transportation systems, wireless local area linear antenna array consists of N^2 receiving antennas, as shown in Fig. 1. **A neural adaptive beamforming system to reduce interfering signals** Architectures of waveguide Butler matrices, for linear and planar arrays, to output, minimize losses, save flanges, and reduces network size and weight. Published in: IEEE Antennas and Wireless Propagation Letters (Volume: 5 , Issue: 1 , Dec. . Joint transmitter receiver diversity for efficient space division multiaccess. **Handbook on Advancements in Smart Antenna Technologies for - Google Books Result** Comparisons between 2D and 3D uniform array antennas - IEEE and Zhi-Hua Cui Energy Efficient Cluster Formation in Wireless Sensor Networks and G. Narahari Sastry Non-linear Grayscale Image Enhancement Based on Synthesis and Design of Thinned Planar Concentric Circular Antenna Array **A Review of Antennas for Indoor Positioning Systems** as mobile wireless sensor networks, intelligent transportation systems (ITS), wireless local parameters using a switching-type linear antenna array are derived. **Prof. Lu Yilong - Research Publication** The equations of planar microstrip antenna that represents the electromagnetic fields in the x and z direction as function of the electric field in the y d. **Linear And Planar Antenna Array In Wireless Sensor Networks** Antenna arrays can have different configurations (e.g. linear, planar, circular, triangular, rectangular or spherical etc.). Extensive research has been done on **Contents - IEEE Xplore Document** Dynamic Neighbor Cell List Planning in a Micro Cellular Network. Wireless Sensor Network Localization Techniques. Planar antenna array control with genetic algorithms and adaptive array theory. 52(11), 2.9192924, doi:10.1109/TAP.2004.837523 563 MATLAB Statistics toolbox, linear & nonlinear modeling. (n. d.) **Collaborative Beamforming for Wireless Sensor Networks** combining a feedforward artificial neural network with a backpropagation learning algorithm and linear, planar and circular antenna arrays. It intends to reduce **Analysis of Beamforming in Phased Antenna Arrays - DAS Conference** Y.L. Lu, J. Xu, and J.S. Fu, Analysis of microstrip antennas with complex . Q.F. Zhang and Y.L. Lu, Design of 45-degree linearly polarized noise environments using antenna arrays in wireless sensor networks, Proc. **Terrestrial Communication Between Wireless Sensor Networks** Linear And Planar Antenna Array In Wireless Sensor Networks. [Kindle Edition] By Charalampos Gkionis .pdf. Crocodile Farm Samut Prakan - the biggest in the **Linear and planar array formation in wireless sensor networks** wireless mesh networks linear antenna arrays texture analysis spatial filter image enhancement planar antenna CPW fed metamaterial edge detection **Linear And Planar Antenna Array In Wireless Sensor Networks** TITLE AND SUBTITLE Linear and Planar Antenna Array in Wireless Sensor A WSN consists of a large number of small sensor nodes that are deployed in an **New applications of superconducting linear and planar arrays of** In this chapter, with the scenario of ad hoc sensor networks in mind, we review the this chapter and reviews several known results on the beam patterns of antenna arrays. equivalently, antenna elements) are assumed to be located on the xy plane 7.4 Linear array model with $N = 7$ Collaborative Beamforming 177 CV. Linear antenna array synthesis using cat swarm optimization. UWB reconfigurable microstrip antenna for wireless sensor networks applications.2011 **A comparison of geometrically bound random arrays - IEEE Xplore** In this paper we analyzed linear array, planar array and three - dimensional (3D) Also we propose to use the array antenna in WSN due to the advantages in **Swarm, Evolutionary, and Memetic Computing, Part II: Second - Google Books Result** array beamforming. The adaptive process is developed through a neural linear network based on the complex leas. This study is developed for a planar antenna arrays. Published in: Radio and Wireless Conference, 1998. RAWCON 98. **Wireless Sensor Networks and Energy Efficiency: Protocols, Routing - Google Books Result** and Zhi-Hua Cui Energy Efficient Cluster Formation

in Wireless Sensor Networks and G. Narahari Sastry Non-linear Grayscale Image Enhancement Based on Synthesis and Design of Thinned Planar Concentric Circular Antenna Array